# Acquired Brain Injury/Learning Disability Training Guide

## High Tech Center Training Unit

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# Objectives

Participants will be able to:

1. identify the basic characteristics and needs of students with learning disabilities or cognitive disabilities from acquired brain injury;

2. discuss the software characteristics that are desirable for use in remediation and compensation of learning disabilities or cognitive disabilities from acquired brain injury;

3. demonstrate representative examples of software for students with traumatic brain injury or learning disabilities ;

4. demonstrate instructional strategies necessary to remediate or compensate for specific skill deficits with computer technology;

5. demonstrate the ability to use the World Wide Web (WWW) on the Internet to find information relevant to learning disabilities or traumatic brain injury;

6. identify the basic steps in a decision-making/problem-solving strategy;

7. discuss the advantages and disadvantages of cooperative group work; and

8. discuss the utility of grammar checkers and spell checkers used with word processing programs.

# Curriculum Models

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# About the Original HTC Curriculum Models

When the High Tech Centers were first implemented , a body of curricula was developed by High Tech Center Instructors and DSP&S Program Directors from around the state. Many existing course offerings on college campuses reflect these original models.

Although the prototype models are out of date in the sense that specific software applications and devices which are mentioned represent out-of-date technology, the structures offered by the various course offerings have proved to be viable models for providing a functional HTC structure which appears to provide relevant instruction for students.

The basic models reflect two curricular strands: assistive technology and instruction designed for students with learning disabilities or brain injuries.

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# Improving Learning Potential Course Outline

## Pre-Requisite/Co-Requisite

The student must have a verified disability. Computer Access Evaluation and/or Keyboarding courses may be required as a pre-requisite or co-requisite. Keyboarding software such as ***Typist*** or *Type!* may be used as a component of the foundations module of the course to acquaint the student with the keyboard in a carefully structured, match-to-sample task.

## Class Format

Three hours per week in lecture/lab format.

## Units

One

## Rationale

This is a three module course designed to improve learning efficiency. Instruction and computer tasks in module 1 will focus on fundamental processing skills such as attention, concentration, impulse control, scanning, discrimination, association, categorization, sequencing, and reaction time. The second module will focus on memory training. The third will be problem solving skills utilizing a variety of strategies. The course will include the use of specialized computer software to improve fundamental processing skills, memory, problem **solving strategies, and to** assist in cognitive rehabilitation. To the maximum extent possible, this course will be related to activities required for students to function in their everyday environment at work, school, and home. As the student progresses to executive functions such as planning, organizing and self monitoring, s/he should be applying these skills to manage and solve problems in his/her environment. These tasks should not be done in isolation, but in the context of an activity which will facilitate the generalization of improved skills into daily living.

## Course Description

This course offers specialized computer assisted instruction for students with learning disabilities or acquired brain injuries to provide an opportunity to maximize their learning potential and increase their academic efficiency.

## Objectives (option A)

Upon successful completion of this course, the student will:

1. Demonstrate improvement in fundamental processing skills in attention, concentration, impulse control, scanning, discrimination, sequencing, association, and categorization, by completing pre- and

post-assessment included in the computer software programs being utilized.

2. Demonstrate, with 80% accuracy, the ability to compare, contrast and apply strategies necessary to achieve competency with one (1) to three (3) software programs as assigned by the instructor and measured by pre- and post-assessment.

3. Make measurable progress toward fulfillment of the goals and objectives stated in his/her Student Educational Program/Individualized Educational Plan that are appropriate to the content and scope of this course.

### Objectives (option B)

Based on the specific goals and objectives written in the Student Educational Contract/Individualized Educational Plan this course will:

1. Provide an opportunity for students with learning disabilities or acquired brain injuries to enhance their learning skills through computer assisted instruction.

2. Offer instruction to develop and refine memory skills and strategies.

3. Provide the opportunity for students with learning disabilities or acquired brain injuries to improve or enhance problem solving skills using strategies of efficient data gathering, contrasting, comparing, and evaluating information.

4. Increase learning efficiency through use of compensatory strategies and computer assisted instruction.

## Course Content and Scope

This course consists of three modules. The content will address fundamental processing skills, cognitive deficits, memory strategies, and problem solving. The type of equipment and/or computer software utilized will be determined by the student's assessed strengths and weaknesses.

**Module 1 -** Fundamental processing skills:

The skills to be addressed include: attention, concentration, reaction time, impulse control, visual scanning, and use of peripheral vision. Auditory and visual discrimination, association, categorization, and sequencing. Computer keyboarding, if necessary, would be included in module 1 to acquaint the student with the keyboard as a carefully structured, match to sample task.

The following computer software to form **a** basis for instruction and skill improvement is suggested:

| Software | Skills Addressed |
|---|---|
| ***React*** | Visual field and reaction time |
| ***Foundations II*** | Concentration, discrimination searching, and scanning |
| ***Color Keys*** | Visual discrimination, attributes analysis, and analogies |
| ***Cognitive Rehabilitation*** | Association, categorization, memory, and sequencing |
| ***Drawing Conclusions and Problem Solving*** | Organization, reasoning, and decision making |
| ***The Pond*** | Spatial memory, hypothesis testing, and prediction |
| ***Typist*** | Keyboarding |
| ***Types*** | Keyboarding |

**Module 2 -** Memory

Instruction will develop and refine memory skills and strategies through the use of visualization, auditory or visual association, mnemonics, peg words, and method of loci techniques.

The following computer software to form a basis of instruction and skill improvement is suggested:

| Software | Skills Addressed |
|---|---|
| ***Memory I and II*** | Attention, organization, storage, and recall |
| ***Memory Castle*** | Strategies of context, personalization, and mnemonics |
| ***Memory Machine*** | Visualization and attention to detail |
| ***Cognitive Rehab*** | Recall and recognition |

**Module 3 -** Problem Solving Strategies

Instruction to develop and refine specific skills outlined below:

A. Identify and understand the problem

B. Identify and structure all the information needed to solve the problem

C. Select the strategy to *get* information or generate a solution. These strategies may include:

1. Information gathering
2. Successive scanning
3. Making **a list**
4. **Looking for patterns**
5. **Breaking into parts**
6. **Analyzing**
7. Making a model, chart or table
8. Using simple objects or simplifying the task
9. **Using analogies**
10. **Working backward**
11. Synthesizing
12. Predicting

D. Describe a number of possible solutions to the problem

E. Evaluate the solutions and choose one or two

F. Evaluate the effectiveness of the solution

The following computer software is suggested to form a basis of instruction and skill improvement in **Module 3 -** Problem Solving Strategies:

| **Software** | **Skills Addressed** |
|---|---|
| ***Ace Reporter*** | Reading for detail and note taking |
| ***Carmen Sandiego*** | **Reading** for detail, reference skills, making inferences and drawing conclusions |
| ***The Factory*** | Spatial memory and sequencing |
| ***Game Show*** | Gathering and remembering clues to determine an answer |
| ***High Wire Logic*** | Attribute analysis, organizing information, and applying rules |

| | |
|---|---|
| • ***Memory Castle*** | Memory strategies of mnemonic systems, creating context, and personalization of information |
| ***Memory Machine*** | Memory strategies of scanning, analyzing, visualization, and attention to detail |
| ***Missing Links English Editor*** | Reading and spelling using doze procedures, context clues, and inference |
| ***Reading Elooz*** | Analytical, reading, spelling and syntax |
| ***Recycling Logic*** | Information gathering, analyzing critical thinking and logical reasoning |
| ***Rocky's Boots*** | Analysis of visual attributes,higher order rules, and sequential logic |
| ***Safari Search*** | Spatial logic including: directionality, analysis of verbal and visual information, use of inference, and strategies |
| ***Ten Clues*** | Reading for concepts, spelling/word association, study skills, and writing |
| ***Tip 'N Flip*** | Spatial problem solving using visual discrimination and mental manipulation of images |

## Reading and Writing Assignments

Reading and writing assignments will utilize student's other coursework or practical needs for employment. Students may use assignments from other classes as topic content for work prescribed in this course. Individualized assignments may also be made when appropriate.

## Outside Assignments

Students will be required to complete outside assignments and will have access to computer lab time (in addition to that which is required by this course) to work on assignments. Outside assignments will be given to facilitate the application of skills such as planning, organizing, and self monitoring in the student's own environment.

## Critical Thinking

Each module of this course requires the organization of information by comparing and contrasting or grouping and labeling the expansion of information which demonstrates flexibility and the synthesizing of information to make a logical conclusion. This course requires understanding of a wide range of strategies appropriate to many different

situations presented randomly by the computer software. Students must compare, contrast and apply strategies to be successful and demonstrate competency with each software program used.

## Primary Method of Instruction

Instruction will be provided through a lecture and laboratory format utilizing both individual and group instruction as appropriate. Cooperative learning groups are recommended as an instructional method.

## Means of Evaluation

Pre- and post-assessment by the instructor will be based on progress criteria specified in Student Educational Contract/Individualized Educational Plan. Students must demonstrate reasonable progress in the ability to compare, contrast and apply strategies necessary to demonstrate competency with each software program assigned by the instructor.

## Grading

The course is offered on a Credit/No-Credit basis.

## Course Completion Outcome

Upon successful completion of this course, the student will demonstrate competencies specified for the Student Educational Contract/Individualized Educational Plan or a contractual agreement that indicated specific work to be accomplished.

## Texts/Supplies Required

Students will supply their own data disks and notebooks.

# Study Skills Course Outline

## Pre-Requisites/Co-Requisites

The student must have a verified disability. Student will show a need for the use of computer assisted instruction to improve study, time management, and/or basic educational skills necessary to be successful in a community college or in a meaningful work setting, as determined by a screening interview.

Computer Access Evaluation and/or Keyboarding for Computer Access may be required as a pre-requisite or co-requisite.

Completion of an introductory course in personal computer use or minimal ability to use standard or adapted keyboard.

## Class Format

Three (3) hours per week lecture/lab.

## Units

One

## Rationale

Educational professionals have become increasingly aware of the potential **use** of microcomputers to enhance instruction and increase productivity for students with learning disabilities, acquired brain injuries, and other disabilities.

Typically, basic skills are taught either in mainstream classes or by Disabled Students Programs & Services (DSP&S) special courses. Some Computer Assisted Instruction (CAI) software is directed at assisting students in developing basic study skills to support successful participation in both mainstream and DSP&S classes. Using computer tutorials, simulations and guided practice, students can improve their reading, language arts and mathematics.

Another role of CAI for students with Acquired Brain Injuries or Learning Disabilities (ABI/LD) is to facilitate development of study skills which will support the student's progress in course work, vocational, and/or life skill areas.

## Course Description

This course is focused on the fundamental principles of study skills and the utilization of computer assisted instruction. Commercially available computer software which is designed to develop basic educational skills, study skills and to increase productivity, forms the basis of this class. Skills to be addressed include: goal setting, time management, reading for specific purposes, note-taking, information synthesizing, report writing, and preparation for exams. Improvement in these basic study skills can result in an overall increase of student productivity. Topics will be taken from any of the regularly offered classes in which the student is enrolled, or from subject matter appropriate to student's current or future employment.

## Objectives

Please note: Three examples of possible objectives are presented here. Each High Tech Center will need to write objectives to comply with their local guidelines.

Example 1

In the traditional college course, the course outline has uniform objectives. However, this class, as authorized by state law (AB 77), has individually prescribed work with each student having different objectives. Prior to or concurrent with the course, the student **is** administered **a battery of** academic and perceptual tests to determine his/her learning strengths and weaknesses. With this information, the instructor and student develop short and long term objectives designed to meet the student's unique needs. Given consistent attendance, the minimal expectation is that the student will achieve these goals.

Example 2

Upon successful completion of this course, the student will:

1. Demonstrate ability to understand and apply software programs by using a computer to complete academic tasks.

2. Demonstrate ability to understand and apply software programs by developing a list of situations (academic and/or everyday) and software programs applied. Three examples of work including documents, spreadsheets, or charts must be submitted.

3. Indicate ability to critically assess, by comparing and contrasting software programs and completing reviews of programs assigned.

4. Demonstrate knowledge of software programs in each of the areas addressed, included in the content and scope of this course, by class discussion and assignments evaluated by instructor.

Example 3

Based on the specific goals and objectives written in the Student Educational Contract/Individualized Educational Plan this course will:

1. Provide an opportunity for students to further develop their basic educational skills, study skills and increase personal productivity by utilizing computer software and hardware.

2. Offer instruction to enable student to apply a variety of software programs which develop and refine study skills.

3. Provide opportunity to utilize computer aided drill and practice to increase basic educational skills as determined by pre and post testing.

**Course Content and Scope**

This course provides an opportunity for students to develop efficient study skills, improve basic skills, and increase personal productivity with the assistance of computer software. The content will focus on the following areas: goal setting and time management, reading for specific purposes, note taking techniques, writing for specific purposes, memory techniques, and test taking preparation.

Computer software programs suggested to implement the content of this course are organized by academic skill areas as follows:

Goal Settin**g** and Time Management:

***Pacesetter*** is a program designed to assist students to identify assignments, break them down into manageable steps, to create a schedule and track their own progress.

***Homeworker*** is a fully integrated program designed to assist students in organization and development of study skills and includes a calendar module to keep track of important dates and deadlines, a grade keeper module so that students may keep a list of their grades **and to keep track of their GPAs.**

**Readin**g for Specific Purposes:,

***Phrase Reading I and II*** provides drill and practice with high interest topics to develop reading skills such as tracking, scanning, comprehension and speed reading.

***Moonlight*** & ***Madness*** offers comprehension task activities utilizing an abridged and adapted collection of classic short stories.

***Speed Reader II*** is designed to improve reading speed, comprehension, and retention.

***Hide 'N Sequence*** presents reading passages to be sequenced. The selections provided represent four styles of discourse: Narration, Exposition, Description, and **Persuasion.**

***Missing Links*** provides an opportunity for students to improve comprehension, make inferences, use context clues and expand their vocabulary.

***Where in the USA is Carmen Sandiego?*** **and** ***Where in the World is Carmen Sandiego? are*** simulation adventure games which require students to: read for specific information, organize and evaluate facts, make inferences and draw conclusions. These programs also require students **to** take careful notes, and appropriately use resource materials such as the dictionary, encyclopedia, almanac and maps for additional information.

Note Taking Techniques:

***Ace Reporter's*** purpose is to learn how to take notes and to incorporate note taking into reading both for detail and main idea. This program requires students to discriminate between essential details and unimportant details in relationship to one central idea. The intended outcome of this software is to provide students with the ability to use clear and concise sentence structure in their own writing.

***Semantic Mapper*** **is an** important tool to assist students in organizing information into associative categories. It could be used as a model for students to follow when taking notes.

Writing for Specific Purposes:

***Writer's Helper*** **is** a collection of programs to help writers find and creatively organize ideas, put those ideas in writing, and evaluate what they have written. This program provides structure and assistance to students for choosing **a** topic, organizing information regarding the topic, deciding the type of paper to write, sequencing thoughts, and evaluating grammatical content. Files created in ***Writer's Helper*** can be transferred to word processing programs (e.g. ***Wordstar, Bank Street Writer, WordPerfect)*** to access a thesaurus, check spelling or accomplish other editing tasks.

***Homeworker*** provides Outliner, a format for outlining papers and speeches and Textwriter, an easy to use word processing system.

***Pacesetter*** includes a Book Report and a Term Paper template which leads the student through sequential steps and requires entering specific information to accomplish an assignment.

***Easy Graph*** can be used by students to develop and print a variety of graphs. This program provides a tutorial on graphs and what they represent.

***Missing Links*** contributes to development of writing skills by improving sensitivity to grammar and punctuation, developing a sense of continuity and cohesion, and providing practice for correct sentence structure and phrasing.

***Grammar Examiner*** provides skill development and practice with proof reading techniques for punctuation and general grammar rules.

Other software programs which may be used to provide instruction and practice with skills related to writing **are *Vocabulary Skills* Prefixes and Suffixes, *Punctuation Skills* Endmarks and Semicolons, *Building Better Sentences, Skills Bank*** (language arts series) and, specific to **spelling, *Spell It, Language Arts: The Partner, Language Arts: The Rules,* and *Word Attack.***

Memory Techniques:

***Remember*** helps students organize and memorize information. The program utilizes proven memory strategies of key words, peg system (association), narrative story, mnemonics, and others. ***Remember*** allows students to enter their own information questions, answers, and three types of hints (either verbal, graphic or auditory).

***Pacesetter*** includes a Study and Review component.

***Homeworker*** has a Flash Card Maker to make memorization tasks easier.

Test Taking Preparation:

***Pacesetter*** includes a Test Preparation component to help students recognize, sequence and plan for preparation activities **in a timely manner.**

***Crossword Magic*** allows student to create a study drill, test taking exercise on any topic, such as: vocabulary practice, a multiple choice test, and other activities to increase memorization skills.

## Reading and Writing Assignments

Assigned program manuals
Use of thesaurus, dictionary, and almanac

## Critical Thinking

In the context of this course, students will be involved in:

1. The process of comparing and contrasting the various software programs.

2. Making inferences about the usefulness of the selected software.

3. Problem solving within the operational context of the assigned software program.

4. Evaluating the uses of the assigned software programs.

## Primary Method of Instruction

Lecture/Lab format

## Means of Evaluation

**Each student will** be required to complete five lab assignments involving creating, editing and printing documents.

A final lab project will be given to each student at the completion of the assigned computer software programs.

Each student will be required to compare and contrast a variety of software programs, as well as determine the appropriate application to the student's academic and/or vocational goals.

## Grading

The course **is** offered on a Credit/no-Credit basis.

Student performance will be graded on a point basis which will be converted to percentage when course credit option is selected.

## Text/Supplies Needed

**Blank 5.25 disk**

## ABOUT THE ADAPTED COMPUTER TECHNOLOGY CURRICULUM

**Attached is curriculum for five** different classes which can be offered through the Adapted Computer Technologies Component of the High Tech Center. The five classes are listed below.

1. **Computer Access Evaluation**
2. **Adapted Keyboarding**
3. **Computer Access I**
4. Computer Access II
5. Computer Access Projects

Taken in the order listed, they can be seen as a sequence, but they need not be. Computer Access I could be the first course a student takes.

### CURRICULUM STRUCTURE

The courses are designed to allow for flexibility in managing student flow through the curriculum. Typically students are referred to the High Tech Center by other instructors and counselors; typically an interview with the student will reveal to the instructor if the student is a candidate for the Evaluation and Keyboarding courses or a candidate for Computer Access I.

The first two courses listed above, **Computer Access Evaluation and Adapted Keyboarding,** can easily serve as filters and proving grounds for students who may be questionable candidates for High Tech Center Courses. At the same time, these courses provide useful time to assess involved students and provide a means for developing keyboarding skills before students actually begin working on word processing tasks.

### Computer Access Evaluation

This course can be structured in two ways: in can be set up as a fixed meeting time with a student over a period of weeks, or it can be done in a time-intensive fashion. The structure is left up to the college and the specialist who will be doing the evaluations.

Not all students need to take this class. This Course is primarily designed to allow for assessment of severely involved students; a learning disabled student who only needs to use a spelling check program as an access tool would not be an appropriate candidate for this class.

This course may be taken concurrently with the keyboarding class.

## Adaptedliahaarding

**Many students come to High Tech Centers with poor keyboarding skills.** As **a general** rule, it is recommended that students be referred to mainstream typing classes to learn keyboarding **skills. This course is designed for those students who cannot function productively in mainstream typing courses.**

**This is not seen as a co-requisite for Computer** Access I if **students have inadequate typing skills. For such students it should be a PRE-requisite. In that way, student participation in Computer Access I is not hampered by lack of knowledge of the keyboard.**

**Experience has shown that simultaneously attempting to master keyboarding, an access technology** and word processing is frequently too much for students to assimilate in a productive **manner.**

**A student who successfully completes the class will have developed touch typing skills and a basic typing rate of at least 20/22 words per minute. Students with significant orthopedic disability will exit this course with familiarity of key locations.**

**Low vision or blind students may require specialized instruction.**

### Computer Access

This course introduces the use of an access technology appropriate to a student's disability in the context of basic word processing.

Students who do not require the assessment or keyboarding class will usually enroll in this course.

This is **a basic introductory course and generally** not repeated. Successful students simply move on to varied activities in the Computer Access II course.

### Computer Access

This is the second semester to Computer Access I. Usually there are two types of course work being done in this class: word processing and other software applications such as spreadsheets and database managers. Other software applications being taught will most probably be instructor- dependent.

Additional versions of this class can be created to meet these specific software application needs or **subject area needs.**

## Computerlsceithojests

**This course is intended for students who have completed** High Tech Center curriculum and need to use High Tech Center facilities in order to compete successfully in academic course work. Students enrolled in this course typically need assistance in learning to use new applications of their access technology.

## COURSE TITLE: COMPUTER ACCESS EVALUATION

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**A student must be eligible for services and instruction from Disabled Student Programs and Services through appropriate verification of a primary disability by certificated personnel and be able to benefit from the programs and services offered by the High Tech Center.**

**ri ASS FORMAT:**

**Individualized assessment, by arrangement.**

**IINITS:**

**One-half unit of credit** for **a** total of nine hours of individualized assessment activities.

RATIONAL .F:

**A determination of a student's access requirements may be required in order to determine the feasibility of that student's participation in High Tech Center classes.**

**The first step in this process is to ascertain whether or not a match can be made between the technological capabilities of the Center and the disabled student's access requirements.**

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This course is designed to provide a means for in-depth computer access evaluation in order to determine an appropriate access **environment for a student** with a disability or multiple disabilities. Likely participants in this course would include students who are multiply **handicapped, severely physically disabled, have acquired brain injuries resulting in secondary orthopedic and/or visual disabilities, re-entering disabled older students, blind or other** students on recommendation of instructional staff.

OBJECT IVES:

1. Through assessment and evaluation the student will be matched with the disability-appropriate adaptation in the following areas:

   A. Keyboard access
   **B. General** mobility and seating
   **C. Cognitive processing abilities**
   **D. Educational goals**

**2. On the basis of the assessment, it will be determined** if the student can be appropriately served by the access technologies available in the High Tech Center.

3. As determined by instructor evaluation, the student must exhibit appropriate adaptive behavior for successful participation in the educational setting.

## COURSE CONTENT AND SCOPE

**MODULE A:** Intake interview and review of student's history including:

1. Educational pals and objectives.
2. Existing familiarity with computer systems, if any.
3. Review of existing medical records, if appropriate.
4. Review of academic records, if appropriate.

**MODULE B/C:** Diagnostic instruction to, evaluate (where appropriate):

1. Keyboard access capabilities.
2. Mobility and seating.
3. Ability to manage tasks associated with basics of access technology and computer system.

    a. Can the student carry out multi-partinstructions.
    b. Can the student perform physical tasks necessary for computer use; e.g., turning on computer, inserting disk.

**MODULE D:** Prescriptive selection and assembly of appropriate array of access devices based on mobility and access evaluation.

**MODULE E:** Basic introduction to and trial use of accessdevices.

1. Adjustment of access devices based on student use.

**MODULE F:** Recommendations and referrals.

On the basis of the evaluations undertaken in this class, the instructor will prepare a prescriptive list of appropriate adaptive technologies and discuss the results with the student.

**MODULE G:** Development of an Individualized Education Plan (IEP) for students who will be taking other High Tech Center classes.

Curriculum Components Not Appropriate:

1. READINGSAN:ammuNaessiceimmas

2. OUTSIDE ASSIGNMENTS

3. CRITICAL THINKING

**PRIMARY METHOD OF INSTRI TrTION.**

**Individualized assessment by the instructor**

**METHOD OF FVAI I JA170N-**

**A** student will receive one-half unit of credit upon completion of the seven course modules.
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**The course is offered on a Credit/No-Credit basis.**

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1. Computer access systems are evaluated and student is/is not recommended for enrollment in other High Tech Center courses.

2. Generation of an IEP for students who successfully can use a computer through the use of adapted technologies provided in the High Tech Center.

3. If no appropriate access technologies are available through High Tech Center and student is referred to other resources.

TEXT/SI **WM** IFS:

Items of a personal nature, e.g., mouthstick, head wand, or unique access device, must be provided by the student.

**COURSE TITLE: ADAPTED KEYBOARDING**

**PRF-REQI TISITE/M-REQIllsrm-**

1. **A student must be eligible for services and instruction from Disabled Student Programs and Services through appropriate verification of a primary disability by certificated personnel and be able to benefit from the programs and services offered by the High Tech Center.**

2. **Computer Access Evaluation may be required as a pre-requisite or co-requisite, if appropriate.**

**CT ASS FORMAT:**

**This course** is a lab class.

This is a variable unit class. One-half unit of credit will be granted upon completion of 24 hours of lab work; or, one unit of credit will be granted upon completion of 48 hours of lab work.

R ATIONALE-

**Touch** typing skills are useful for appropriate speed and performance in word processing tasks. This course is necessary for students who are not able to participate successfully in mainstream typing classes.

Adapted computer technologies will be incorporated into the context of software keyboarding tutorials.

COARSE DESCRIPTION:

This course is designed to teach keyboarding basics to disabled students who must use adaptive technologies for successful access to the keyboard or screen and/or are unable to compete successfully in mainstream typing classes.

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1. The student will demonstrate, by the end of the course, effective use of an appropriate access technology, if needed (e.g., VISTA, Filch), in conjunction with the software program used to teach keyboarding by completing lessons independently.

2. The student will demonstrate key-stroking proficiency with at least one computer keyboard in order to complete the minimum requirements of this course. This key-stroking proficiency will demonstrate familiarity with the following areas:

A. The alpha-numeric components of the computer keyboard (the QWERTY configuration).

B. The specialized areas of the keyboard (the numeric keypad, the arrow keys, the function keys) and the special control keys (e.g., CONTROL, ALT, DELETE, ESC).

3. The student will develop appropriate touch typing techniques on the alphabet portion of the keyboard.

4. The student will achieve a minimum typing rate of 22 words per minute with a maximum of two uncorrected errors per minute on a three-minute timed test of copy writing in order to be recommended for further instruction and service through the High Tech Center.

(This words-per-minute minimum criterion is that recommended in the **Keyboarding Curriculum Guidelines** published by the State of Washington in July, 1986.)

5. For a student whose disability prevents a minimum typing criterion score, demonstration of familiarity with the physical configuration of the keyboard layout will be required. These students might typically include but are not limited to: persons with orthopedic disabilities, neuromuscular disorders or acquired brain injury.

## COT TRSE CONTENT AND SCOPE

Touch typing skills will be taught through the use of software tutorials. TYPIST is an example of a software program which is compatible with access technologies: e.g., VISTA, which provides access for low vision students, and Filch, which provides keyboard control for orthopedically impaired students unable to efficiently use a standard keyboard. Any keyboarding tutorial with similar compatibility with access technologies may be used.

If the program TYPIST is used, the following would serve as appropriate course content:

The student will learn:

1. The keyboard layout.

2. Which finger types which key.

3. Good technique in keystroking.

   The student will monitor keystroking activity by observing graphically displayed keystroke patterns as evaluated by the TYPIST program.

4. To keep his or her eyes on the screen.

5. To develop speed in typing short sequences of keys.

6. To develop accuracy in typing short sequences of keys.

7. To develop speed in typing short phrases, sentences, paragraphs.

8. To develop accuracy in typing short phrases, sentences, paragraphs.

**9. Will successfully copy text for a one minute timed writing at a gross striking rate of at least 22 words per minute allowing for two error words per minute. ***

**10.Will successfully copy text for a three minute timed writing at a gross strildng rate of at least 22 words per minute allowing for two error words per minute.** *

***NOTE: These timed writings will be administered by the instructor; they are not a** part of the TYPIST **program.**

**Course outline components not appropriate to this course:**

1. RRADTNG ANT) WRITING ASSIGNMENTS

**2. OT ITSIDF. ASSIGNMENT'S**

THINKING

Critical thinking **is** inherent in working through a sequenced software program.

1. **In** order to proceed successfully through **a sequenced program, a student must deduce which menu option is most appropriate upon completion** of **a task** if there are no specific instructions.

To do this, the student must analyze and evaluate his performance on the task just completed and must use deductive reasoning to make most appropriate menu choice.

PRIMARY METHOD OF INSTRUCTION:

Instructor-supervised computer assisted instruction in **a lab setting.**

**MEANS OF EVAI JATION:**

A student's familiarity with the keyboard will be measured by **performance on timed typing tasks.**

1. **The student will achieve a minimum typing rate of 22 words per minute with a maximum of two** uncorrected errors per minute on a three-minute timed test of copy writing.

In some instances the instructor may decide that a student's disability legitimately prevents **him or** her from reaching the target minimum speed. For such a student, demonstration of obvious familiarity with the physical keyboard should be the factor **determining successful completion of the class.**

**Students who are unable to meet** the target minimum speed, and who have no mitigating disabling condition, should be regarded as not yet ready for High Tech Center classes.

**GRADING:**

**This course is offered on a Credit/No-Credit basis.**

**COT TRW MMPT ETION OT ITMME.**

**Assuming the absence of intervening disabilities, the student will, upon successful completion of this course, demonstrate touch typing skills and a basic typing rate of at least 22 words per minute with a maximum of two uncorrected errors per minute. The student may demonstrate a familiarity with more than one type of computer keyboard.**

**TEXTS/ST TPPLTPS REOT TIRED:**

**None**

**COURSE TITLE: COMPUTER ACCESS I**

**PRE-REOUISITE/CO-REOUISITE:**

1. **A student must be eligible for services and instruction from Disabled Student Programs and Services through appropriate verification of a primary disability by certificated personnel and be able to benefit from the programs and services offered by the High Tech Center.**

2. **Successful completion of and referral from the Computer Access Evaluation class may be required.**

3. **Adapted Keyboarding is required as a prerequisite if a student does not have adequate touch typing skills (approximately 20 wpm).**

**NOTE: Touch typing skills are not required for a studentwith orthopedic disabilities, but such a student must have an established, independent means of accessing the keyboard.**

CI ASS FORMAT:

**Lecture two hours per week with** 1-2 hours of lab per week.

**LINES'**

Two units of credit are allowed (three units can be earned if 48 hours of lab time are completed)

RAILOITATIL

Access to microcomputers is necessary **for many disabled students to participate sucessfully in post-secondary eduction.**

**Since written communication is a primary requirement for** success in both academic and job-related environments, the course introduces the use of specialized computer **access systems within the context of word processing.**

COI TRSF DESCRTPTTON:

**Designed for students with** visual, physical, language impairment, learning disabilities or deafness, this course provides training in the-use of computer access technologies which **enhance a disabled student's ability to access and use microcomputers.**

**Training in the use of computer access technologies will occur** within the context of word processmg. Students will be familiarized with basic concepts of word processing used by the majority of industry-standard word processors, e.g., WordStar, WordPerfect.

**0131ECEDZES**

1. **Evaluation and selection of access technologies appropriate to the student's** disability if **the student has not completed the Computer Access Evaluation class.**

2. **instruction in the use of access technologies appropriate to the student's disability in the context of word processing. Specialized areas of instruction might include individual and/or small group instruction in the use of:**

   A. MindReader

   **A specialized word processing environment for moderately to severely orthopedically disabled, learning disabled, and deaf or hard-of-hearing students.**

   **B. Ttirbn** Lightning

   **A continuous, real-time spell-checker and thesaurus for use** by all disability groups.

   C. VISTA/NicePrint

   **Hardware and software for large text on computer screen and from printer for low vision or learning disabled students.**

   D. DECITalk/Freedomt

   **Screen reading and speech output for blind, low vision,learning disabled or language impaired students.**

   **E. Filch**

   **Keyboard adapter for physically disabled, learning disabled, low vision or blind.**

   F. Keytronics KB5151 Keybnard

   **Specialized keyboard for use by physically or learningdisabled.**

COT TR SE CONTENT AND SCOPE

**RATIONALE FOR COURSE STRUCTURE:**

**The total instructional period** for use of specialized access devices will be four weeks. The remainder of the semester will be spent in using the access technology in the **context of word processing.**

**It is anticipated that blind students will require the entire four weeks for beginning** efficiency with screenreading techniques. Moderately physically disabled students will require two weeks to develop beginning proficiency with their specific access technology; all other students will require approximately **one week to develop beginning** proficiency.

Upon achievement of beginning competency levels with appropriate access technologies, students will use the balance of this initial four-week period to review computer keyboarding skills through the use of keyboarding software. Within the remaining 12 weeks, the following competencies will be acquired in the approximate time periods listed.

**Weeks 1-4** **The student will develop competency in a specialized access adaptation and review basic keyboarding skills**

**Week 5** **The student will become familiar with basic use of microcomputers in conjunction with specialized computer access systems.**

**The student will understand and appropriately perform:**

1. **Disk handling**
2. **Basic startup procedures**
3. **Basic DOS commands***

*** optional**

**Week 6** **The student will be able to understand and define the following word processing concepts and structures.**

1. **Word processing**
2. **File**
3. **Document**
4. **Word wrap**
5. **Edit**
6. **Format**
7. **Pagination**
8. **Spelling check**
9. **Data disk/program disk**

**Weeks 7-9** **Using appropriate adaptive technology, the student will be able to open or edit a document and use the following basic word processing procedures:**

1. **Move cursor to any point on screen**
2. **Erase, insert and edit text**
3. **Change margins, line spacing and tab settings**
4. **Move marked blocks of text within document**
5. **Print a file**
6. **Save and retrieve word processing documents**

**Weeks 10-16** **The student will successfully apply computer access technologies and basic word processing skills in creating and editing:**

1. **Business letter format**
2. **Memo format**
3. **Essay format**
4. **Outline format**

**Week 17** **Course review**

**Week 18** **Final exam**

**RRADINCiS AND WRTTINCi ASSIGNMENTS:**

1. **Students will read chapters from assigned text**

2. **Students will complete many writing assignments in the context of word processing tasks. Examples:**

   a. **content appropriate to a business letter**
   b. **a tutorial manual which details basic word processing commands and tasks**
   c. **short essays on specified subjects**

**OUTSIDE ASSIGNMENTS:**

**Readings in the assigned text.**

**CRITICAL THINKING:**

**Critical thinking is involved in the successful execution of all computer tasks; e.g., which command is appropriate to which situation.**

**Examples of specific projects which require critical thinking:**

1. **Students will independently solve unfamiliar problems: students will be given a "jumbled" file and will reassemble it into an appropriate form matching hard copy by using word processing commands (e.g., block moves, deletions).Students will not reassemble the file by simply typing in the correct form.**

2. **Students will apply principles of editing in a word processor by editing a severely misspelled and poorly produced file. Students will be expected to analyze word usage and, if necessary, determine the semantically correct word as spelling is corrected. Students will observe standard typing format protocol in the editing of this file.**

3. **The student is expected to prioritize steps to complete assignments; is expected to plan how to complete required lab time; where applicable, the student is expected to apply concepts learned in this class to assignments for other classes.**

## METHODDEINSIMI = 1 :

**This class will be conducted on a small group or individual basis.**

MRANS **OF RVAT** I IATION.

**Grades are arrived at as follows:**

**30% Class assignments**
**20% Quizzes**
**20% Midterms**
**30% Final**

**Typical examinations will require a knowledge of word processing commands and the actions they perform.**

**Students will also be evaluated on the successful completion of "hands-on" tasks given as evaluation measures.**

**(IR ADING:**

**This course is offered on** a Credit/No-Credit basis.

rat IR SF. COMPI .RTION OT ITCOME:

**Upon successful completion of this course, the student will be familiar** with the access devices appropriate to his or her disability and will demonstrate knowledge of basic word processing skills.

TF3CT/SI JPPI IFS REOI TIRED:

A basic college-level word processing text for the specific word processor used is required. Students are requested to provide two floppy disks.

Items of a personal nature such as **a mouth stick or head wand, or a unique electronic access device must also be provided by the student.**

**COURSE TITLE: COMPUTER ACCESS II**

PRP.-RECUT ITSITE/CO-REOT ITSTTE:

**A student must be eligible for services and instruction from Disabled Student Programs and Services through appropriate verification of a primary disability by certificated personnel and be able to benefit from the programs and services offered by the High Tech Center.**

**Instructor approval and successful completion of Computer Access I is necessary. The instructor may directly refer a student into Computer Access II if the student has had prior experience with access technologies and exhibits adequate touch typing skills.**

CI ASS FORMAT:

**Lecture two hours per week plus 1-2 hours of lab per week.**

**Two (or three with a total of 48 hours of lab work).**

**R ATIONAT**

**This course is designed to further refine computer access skills developed by a student. Students who have completed Computer Access I may have developed only a beginning competency in their prescribed access technologies and will require additional instruction in order to fully utilize their access systems.**

**COURSE DESCRIPTION:**

This course is designed for disabled students who have successfully completed Computer Access I. Students will enhance their computer access skills through the completion of assignments or projects.

OBJECTIVES:

Objectives will be individualized **and based upon student educational/vocational objectives. Possible objectives are stated below.**

1. For students pursuing advanced word processing tasks:

   The student will demonstrate skill in the use of a computer access application in the context of advanced word processing tasks such *as* mailnaerge functions, columnar block moves, editing multiple documents, advanced formatting and stylistic techniques which require sophisticated knowledge of a particular access device.

**2. For students learning other software applications:**

**The student will develop competency in the use of an adapted computer application in conjunction with such widely used computer programs as spreadsheets, database managers, accounting systems or computer assisted design.**

## COURSECONITALANDSCOPEa

**Course content will depend upon the unique access needs of the student and type of skills to be developed by the student.**

**Typical examples of course modules could include one or more of the following:**

1. **Development and refinement of screenreading skills for blind students. This might include a sequence of activities encompassing screen reading techniques for advanced word processing applications or other software programs.**

2. **Development and refinement of access skills for low-vision students in the context of visually intensive software applications such as spreadsheets or desktop publishing.**

3. **Further basic access skills development for students with extremely slow text entry capabilities (head wand or mouth stick keyboard entry, or limited manual entry) in the context of word processing or other applications.**

## READINGS ANT) WRITINGS

1. **Students will be assigned readings from required texts as needed to learn n tions.**

2. **Writing assignments are components of almost all word processing tasks.**

## OUTSIDE ASSIGNMENTS:

**Students will be required to complete outside assignments which will involve deciding on the style and manner of completing basic in-class, hands-on projects.**

## CRITICALTHINICala:

**Critical thinking skills are involved in all activities of this class. Students will be required to synthesize new information and apply it to known and new situations as they develop skills in using their access technology in the context of new applications.**

**Example:**

**A student will develop an instructional manual describing the use of his/her access device in conjunction with a new computer application.**

**MEMEIQUNSMICIE111:**

**This class will be conducted primarily on an individual and small group lecture/lab basis.**

MEANS OF EVALT TATION.

**30% Class assignments**
**20% Quizzes**
**20% Midterms**
**30% Final**

**Example:**

**Read and edit complex text files including indented paragraphs, columnar text, on screen help menus and other frequently used text display modes.**

**GRADING:**

**This course is offered on a** Credit/No-Credit basis.

TRSE COWl' PTION 0I ITCOME:

**Upon successful completion of this course the student will demonstrate sophisticated access skills in conjunction with advanced word processing or other software applications.**

TEAMS! JPPT WS REM TIRED:

Student supplies own disks. Texts as required by type of computer access project.

## COURSE TITLE: COMPUTER ACCESS PROJECTS

**PREJIEQUISITELCO-13EQUISEEE:**

**A student must be eligible for services and instruction from Disabled Student Programs and Services through appropriate verification of a primary disability by certificated personnel and be able to benefit from the programs and services offered by the High Tech Center.**

**Instructor permission is required. It is expected that students who enroll for this class will be able to work independently in the lab except for new aspects of the access technology which they are employing.**

II ASS FORMAT.

**This course is a lab project course.**

T JNTTS-

**This is a variable unit course; one unit of credit will be granted upon completion of** 48 hours of lab work. One- half unit of credit will be granted upon completion of 24 hours of lab work.

**R ATIONAT**

This course is designed for students who have completed the regular High Tech Center curriculum and who must learn new and advanced areas of their adapted technologies in order to complete other classroom assignments or special projects.

COT TRSF. DFSCRTPTION.

**This course is designed for students who require access to specialized adaptive technologies in order to complete assignments for other classes in which they are concurrently enrolled.**

COT IRSF ORTFCTIVFS.

1. **The student** will learn new skills associated with highly specific applications of his/her access technology.

2. The student will acquire advanced problem-solving skills in the use of his/her access technology in the context of practical day-to-day use.

COT IR SE CONTENT ANT) SCOPE.

1. The student will meet with the instructor to discuss the project which the student wishes to complete.

2. Based on this student/instructor discussion, the instructor will determine the validity of the project and what new aspects of the student's access technology must be taughtwithin the context of this assignment.

3. The student will complete a contractual agreement which details the work to be done, the ACT assistance to be required, and the estimated length of time needed to complete the assignment.

Basic instruction will involve new applications of access technologies used in the High Tech Center. Applications will vary from student to student.

Typical examples of such work would be a low vision student learning to use access technologies with software required for an accounting class; or, a blind student using a screen reading program to develop complex screen layouts for a course in poetry composition.

The following course outline components are not appropriate to this course:

1. READINGS AND WRITING ASSIGNMENTS

2. OI JTSIDE ASSIGNMENTS

## CRMCAT THINKING:

Critical thinking is directly involved in the successful completion of all aspects of work for this course: the ability to work independently without requiring specific instruction except in the new use of the access technology is a demonstration of use of critical thinking skills.

## METE10114EINSIMISMON;

This class will be conducted on a lab basis.

## MF.ANS OF EVAT .UATION:

Completion of class project and mastery of new access application as described in student/instructor contractual agreement.

## GRADING:

This course is offered on a Credit/No-Credit basis only.

## COURSECOMPLEnCM=QME:

The student will have successfully used his or her type of adaptive technology in a new context.

**TFXTIST IPPLIES REM TIRED:**

**Student must provide own disk.**

e

# Action Verbs for Writing Course Objectives

The following taxonomy arranges learning skills hierarchically, with lower order skills listed earlier and higher order skills listed later.

**Knowledge** (objectives that ask students to recognize and recall facts and specifics)

| | | | |
|---|---|---|---|
| define | record | recall | name |
| memorize | list | relate | state |
| repeat | | | |

**2. Comprehension** (objectives that ask students to summarize or paraphrase given information)

| | | | |
|---|---|---|---|
| discuss | explain | express | locate |
| restate | recognize | report | identify |
| tell | describe | | |

**3. Application** (objectives that ask students to use information in a situation different from the original learning context)

| | | | |
|---|---|---|---|
| translate | use | sketch | practice |
| schedule | interpret | operate | employ |
| illustrate | show | apply | demonstrate (a skill) |
| dramatize | | | |

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

**Course objectives for general education courses should be written primarily using verbs from the following categories which require a higher order of critical thinking:**

**4. Analysis (objectives that require students to separate the whole into its parts, until the relationship among elements is clear)**

| | | | |
|---|---|---|---|
| **classify** | **calculate** | **criticize** | **question** |
| **distinguish** | **experiment** | **diagram** | **relate** |
| **analyze** | **test** | **inspect** | **examine** |
| **differentiate** | **compare** | **debate** | **translate** |
| **appraise** | **contrast** | **inventory** | **interpret** |

From De Anza Curriculum Handbook 1996-97
URL: www.htctu.fhda.edu/curric/handbook.html
October 1996

**S. Synthesis (objectives that ask students to combine elements to form a new entity)**

| | | | |
|---|---|---|---|
| **synthesize** | **formulate** | **create** | **prepare** |
| **compose** | **arrange** | **design** | **integrate** |
| **plan** | **assemble** | **set up** | **predict** |
| **propose** | **collect** | **organize** | **summarize** |
| **construct** | **manage** | | |

**6. Evaluation (objectives that ask students to make decisions, judge or select based on criteria and rational)**

| | | | |
|---|---|---|---|
| **judge** | **compare** | **score** | **assess** |
| **appraise** | **value** | **select** | **estimate** |
| **evaluate** | **revise** | **rate** | **measure** |

**Adapted from Benjamin S. Bloom (Ed.) Taxonomy of Education Objectives Handbook 1: Cognitive Domain. New York: David McKay Co. Inc. 1956**

# Course Materials From Other Colleges

The following pages contain representative examples of course materials designed for use with students with learning disabilities or traumatic brain injuries.

Credit is given to each instructor whose course work is included.

# Course Materials

The following materials were developed by Jan Heck of Coastline College as part of a FIPSE (Fund for the Improvement of Postsecondary Education) grant.

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Aar•Pili irntlitil 11154N

# C6VBI

aw

Coastline Community College Comprehensive Cognitive-retraining Curriculum for Adults and Adolescents with Acquired Brain Injury

# You asked for itmit's finally here!

C6A3BI is based on Coastline Community College's internationally renowned Traumatic Head Injury Program. A dozen Coastline professionals designed and packaged the curriculum under a three-year grant from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE).

Put Coastline's 20 years of experience with Acquired Brain Injury (ABI) students right at your fingertips.

- ✓ Specially designed computerized student assessment
- ✓ Instant printout of individualized prescriptive curriculum

The C6A3BI Package also includes instructor lesson plans, student handouts and homework assignments, plus in-class and computer-based activities addressing such topics as:

- **Critical Thinking Skills**
- **Verbal and Figural Skills**
- **Psychosocial Adjustment to ABI**
- **Applying Compensation Strategies at Home**
- **Memory and Attention**

**Call (714) 241-6214 for more information.**

**CABI REPORT (Form B)**

**Student: MARY SMITH**
Date of Report: 9/6/96

For each completed module of the CABI Assessment, this report lists scores for both the whole **module and its individual sections.**

**FIGURAL SIMILARITIES** & DIFFERENCES
Total Score = 30% (7/23); Total Time = 01:15
** Section 1: **Matching Figures; Section Score = 17% (1/6)**
** Section 2: What **Shape Completes** the Square?; Section Score = 13% (0.5/4)
** **Section 3: Congruent Figures; Section Score = 11% (1/9)**
** **Section 4: Cube Counting; Section Score = 100% (4/4)**

**FIGURAL SEQUENCING**
**Total** Score = 100% (6/6); Total Time = 02:25
** Section 1: Sequencing Figures; Section Score = 100% (3/3)
** Section 2: **Rotating Figures; Section Score =100% (3/3)**

FIGURAL CLASSIFICATION
Total Score = 66% (21/32); Total Time = 00:40
** Section 1: Describing Classes; Section Score = **56% (5/9)**
** Section 2: **Matching Classes By Shape; Section Score** = 33% (1/3)
** Section **3: Changing** Characteristics; Section Score = 71% **(10/14)**
** Section 4: Sorting; Section Score = 83% (5/6)

FIGURAL ANALOGIES
Total Score = 100% (8/8); Total Time = 00:59

VERBAL SIMILARITIES & DIFFERENCES
Total Score = 55% (11/20); Total Time = 00:39
** Section 1: Antonyms; Section Score = 50% (2/4)
** Section 2: Synonyms; Section Score = 50% (2/4)
**** Section 3: How Are The Words Alike?; Section Score = 58% (7/12)**

VERBAL SEQUENCING
Total Score = 72% (57/79); Total Time = 01:46
** Section 1: Sequencing By Time & Degree of Meaning; Section Score = 22% (4/18)
** Section 2: **Transitivity (Comparison & Time Order); Section Score = 50% (8/16)**
** Section 3: Cause-Effect; Section Score = 100% (9/9)
** Section 4: Negation & Conjunction; Section Score = 100% (36/36)

VERBAL CLASSIFICATION
Total Score = 90% (38/42); Total Time = 01:26
** Section 1: Parts of a Whole; Section Score = 67% (6/9)
** Section 2: Class and Members; Section Score = 100% (9/9)
** Section 3: Classes and Subclasses; Section Score = 92% (11/12)
** Section 4: Identify the Exception; Section Score = 100% (12/12)

**VERBAL ANALOGIES**

Total Score = 100% (4/4); 'Total Time = 00:16

DEDUCTIVE REASONING
Total Score = 56% (5/9); Total Time = 00:16

MISSING PREMISES
Total Score = 67% (2/3); Total Time = 00:17

QUESTIONING STRATEGIES
Total Score = 60% (6/10); Total Time = 00:12

RELEVANT & IRRELEVANT INFORMATION
Total Score = 25% (1/4); Total Time = 00:13

WHIMBEY ANALYTICAL SKILLS INVENTORY (WASI)
Total Score = 66% (25/38); Total Time = 03:48
** Section 1: Verbal Reasoning; Section Score = 50% (6/12)
** Section 2: Analysis of Trends & Patterns; Section Score = 50% (4/8)
** Section 3: Analogies—Verbal & Numerical; Section Score = 80% (8/10)

APPLICATION EXERCISES
Total Score = 100% (79/79); Total Time = 18:45
** Section 1: Application (moderate); Section Score = 100% (24/24)
** Section 2: Application (difficult); Section Score =100% (22/22)
** Section 3: Application (most complex); Section Score = 100% (33/33)

LoKtS T

CABI REPORT (Form A)

Student: JAN HECK
Date of Report: 9/24/97

For each completed module of the CABI Assessment, this report lists scores for both the whole module and its individual sections. Based on the scores, the CABI system then prescribes appropriate curriculum.

Curriculum is prescribed even for those students achieving 100% on any given subtest. This provides all students with the opportunity to improve their skills.

NOTE: Curriculum pages given in brackets (e.g., [18-20] ) are especially difficult.

FIGURAL SIMILARITIES & DIFFERENCES
Total Score = 100% (23/23); Total Time = 04:52
** Section 1: Matching Figures; Section Score = 100% (6/6)
Suggested Curriculum:
1. Building Thinking Skills-Book 3, Figural: pp. 9-10
2. Mechanical Aptitude & Spatial Relations Tests: pp. 22-25, [96-98, 102-106]
3. Critical Thinking Activities: pp. 72, 74, 83, 87-89, 97-98, 100, 106, 109
4. Brain Stretchers, Book 2: pp. 43-45, 52-54
** Section 2: What Shape Completes the Square?; Section Score = 100% **(4/4)**
**Suggested Curriculum:**
1. Building Thinking Skills-Book 2: pp. 19, 34-35
2. Building Thinking Skills-Book 3, Figural: pp. 18-19, 71-78
3. Mechanical Aptitude & Spatial Relations Tests: pp. 31-38
4. Critical Thinking Activities: pp. 59-60, 90
5. Brain Stretchers, Book 2: pp. 22-24
**Section 3: Congruent Figures; Section Score = 100% (9/9)
Suggested Curriculum:
1. Building **Thinking Skills-Book** 3, Figural: pp. 27, 29-31, 40-59, 65-67
2. Critical Thinking Activities: pp. 58, 64, 73, 76-80, 92, 94, 99
3. Thinking Skills IL pp. 2
** Section 4: Cube Counting; Section Score = 100% (4/4)
Suggested Curriculum:
1. Mechanical Aptitude & Spatial Relations Tests: pp. 56-62
** Supplemental FSim Curriculum:
I. Critical Thinking Activities: pp. 66, 70, 84, 105

**FIGURAL SEQUENCING**
Total Score = 100% (7/7); Total Time = 01:41
** Section 1: Sequencing Figures; Section Score = 100% (4/4)
Suggested Curriculum:
1. Building Thinking Skills-Book 2: pp. 49-52
2. Building Thinking Skills-Book 3, Figural: pp. 108, 110-112
3. Mechanical Aptitude & Spatial Relations Tests: pp. 130-134, 98-102
4. Intelligence Applied: pp. [131-141, 157-167]
5. Critical Thinking Activities: pp. 65, 91, 93, 101, 104, 107-108
** Section 2: Rotating Figures; Section Score = 100% (3/3)
Suggested Curriculum:
1. Building Thinking Skills-Book 2: pp. 70-72
2. Building Thinking Skills-Book 3, Figural: pp. 115-131, 145-163, 176-190
3. Mechanical Aptitude & Spatial Relations Tests: pp. [46-51, 65-77, 81-89]
4. Critical Thinking Activities: pp. 67, 95-96

# FIGURAL SEQUENCES

## SEQUENCE OF FIGURES-SELECT

**STRAND:** Figural Sequences **PAGES: 42-45**

**ADDITIONAL MATERIALS:**
Transparencies of TMs #11, #12, and #13 (cut apart as indicated)
Attribute or design blocks (optional)

INTRODUCTION:

***A sequence is defined as an arrangement of things having regular patterns or regular changes. Where In this room can you see examples of patterns?***

Answers: fabric in clothing; cement block or brick walls; floor or ceiling tiles; Venetian blinds; leaf arrangements on plants

OBJECTIVE:

***These exercises deal with sequences. You will determine what the sequence Is by looking for the pattern of changes in a series of figures.***

**DEMONSTRATION/EXPLANATION:**

Optional demonstration using blocks:

Use attribute. or design blocks to set up the following sequence on the chalkboard tray or tabletop. *NOTE:* ***This set will be used at the beginning of the demonstration.***

| | | | | |
|---|---|---|---|---|
| LARGE BLUE SQUARE | LARGE BLUE CIRCLE | LARGE BLUE TRIANGLE | LARGE BLUE SQUARE | LARGE BLUE CIRCLE |

Set up this sequence of blocks to the right, a considerable distance from the first.

*NOTE: This* ***set will be used at the middle of the demonstration*** *by the* ***students.***

| | | | | | |
|---|---|---|---|---|---|
| LARGE RED CIRCLE | LARGE BLUE CIRCLE | LARGE RED TRIANGLE | LARGE BLUE TRIANGLE | LARGE RED SQUARE | LARGE BLUE SQUARE |

***Here you see a row of shapes.***

Point to the first set on the left.

***Look fora pattern so you can determine the next shape in the series. If you compare the first and second shapes, you will notice they are the same size and color, but they have different shapes. This one...***

Point to the large blue square.

...is ***a large blue square, and this one...***

Point to the large blue circle.

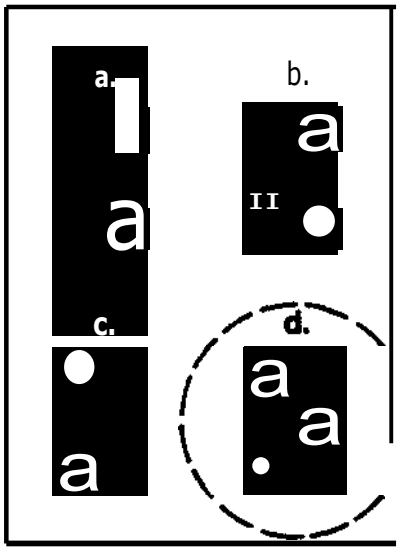
***..is large and blue, but it is a circle. Compare the second and third shapes in this series and determine what was changed.***

Answer: The shape changed from circle to triangle, but the color and size stayed the same.

***The first three shapes in this pattern are LARGE BLUE SQUARE, LARGE BLUE CIRCLE LARGE BLUE TRIANGLE The color and size do not change, but the***

# SEQUENCE OF FIGURES—SELECT

Here are three figures. Look at them carefully. How are the figures changing? Circle the figure in the choice box which continues the series or sequence of changes.




Did you circle figure "d"? Did you notice how the checked pattern keeps changing?

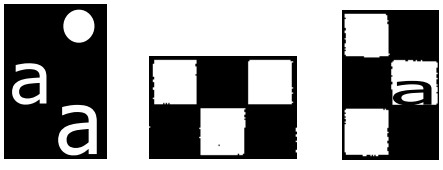
Figure "a" should not be circled because it is not all checked.

Figure "b" should not be circled because. the checks are the same as those on the third figure.

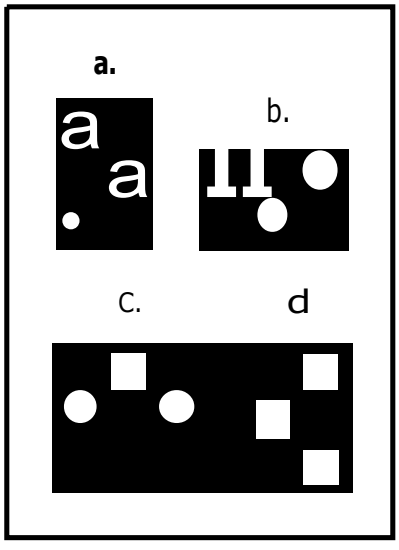
Figure "c" should not be circled because it is not all checked.

Circle the figure in the choice box which best continues the sequence.

B-1



Choice Box



# VERBAL SIMILARITIES AND DIFFERENCES

## OPPOSITES—SELECT

**STRAND: Verbal Similarities** **PAGES: 128-130**

**ADDITIONAL MATERIALS:**
**Transparency of student workbook pages 125 and 128**
**Washable transparency marker**

**INTRODUCTION:**
**Project the transparency of page 125.**

*In the figural analogy exercises you selected or drew figures that had the opposite position or the opposite color. In exercise* D-77 *you illustrated* ***opposite color.*** *In exercise* D-78 *you illustrated* ***opposite position.***

**OBJECTIVE:**

*In these exercises you will select a word that has the* ***opposite meaning*** *of a given word,*

**DEMONSTRATION/EXPLANATION:**
**Project exercise E-1 from the transparency of page 128.**

*You will look for the word that is* ***most unlike*** *the given word. After you have selected a word, check the other words to confirm that they are fiat opposites. In exercise* E-1 *you are given the word gain and three words which might be opposite to gain.* ***Gain*** *means an addition or increase. You must find a word that means the opposite of increase.* ***Loss*** *means a subtraction or decrease and is the opposite of gain. Now check the other words to be sure that loss is the word most unlike gain.* ***Profit*** *means to gain or increase money, so profit is not an opposite.* ***Weight*** *is a characteristic that can be gained or lost, so it can't be an opposite. Therefore, loss is most unlike gain and should be circled.*

*NOTE: Since* ***weight, loss,*** *and* ***profit*** *are all nouns, the definition of gain as a verb should be avoided.*

**GUIDED PRACTICE:**
**EXERCISES: E-2, E-3, E-4**
**Give students sufficient time to complete these exercises.. Then, using the demonstration methodology above, have them discuss and explain their choices. Use the following cues to encourage the discussion procedure demonstrated:**

1. **RECOGNIZE/PRONOUNCE WORD**
2. **DEFINE WORD**
3. **DEFINE OPPOSITE WORD**
4. **SELECT OPPOSITE WORD (ANSWER)**
5. **EUMINATE DETRACTORS (CONFIRMATION)**

## OPPOSITES—SELECT

**Each line contains four words. Read the first word and think about what it means. One of the next three words will mean the opposite of the first word. Underline the word that is the opposite of the first word.**

| | | | |
|---|---|---|---|
| **E-1 gain** | **a. loss** | **b. profit** | **c. weight** |
| **E-2 play** | **a. amuse** | **b. entertain** | **c. work** |
| **E-3 allow** | **a. deny** | **b. let** | **c. permit** |
| **E-4 safety** | **a. cover** | **b. danger** | **c. shelter** |
| **E-5 mend** | **a. break** | **b. correct** | **c. patch** |
| **- E-6 neat** | **a. clean** | **b. messy** | **c. orderly** |
| **E-7 tight** | **a. close** | **b. firm** | **c. loose** |
| **E-8 save** | **•-•-•.a. collect** | **b. rescue** | **c. spend** |
| **E-9 harm** | **a. benefit** | **b. damage** | **c. hurt** |
| **E-10 permit** | **a. allow** | **b. forbid** | **c. have** |

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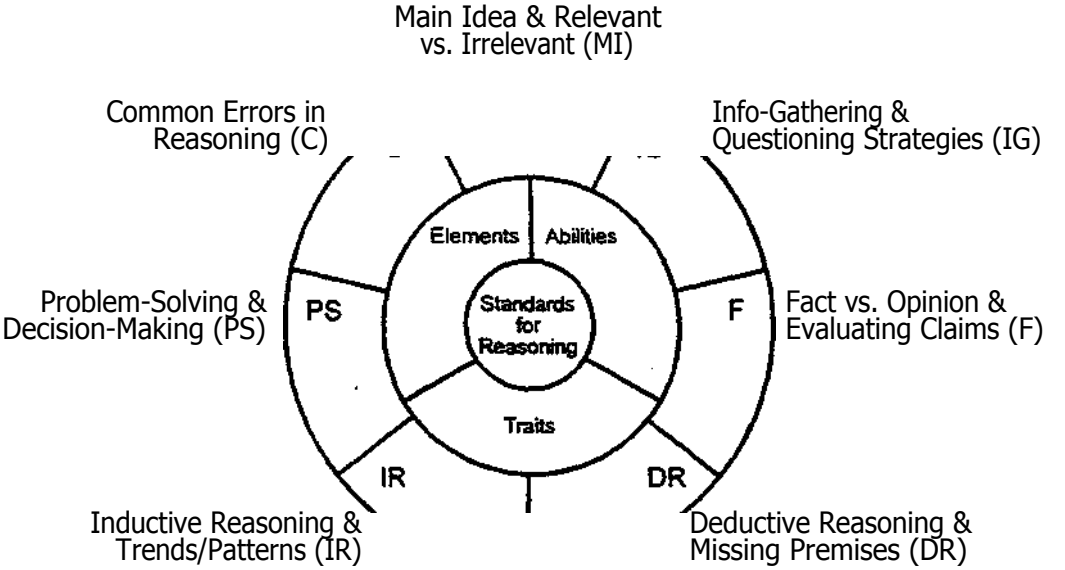
# C6A3BI

*Coastline Community College Comprehensive Cognitive-Retraining Curriculum for Adults and Adolescents with Acquired Brain Injury*

# CRITICAL THINKING MODEL itt CURRICULUM Instructor Notes, Student Handouts, Sample Lessons, & References

**Jan Heck** Editor



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# CRITICAL THINKING MODEL ilk CURRICULUM

**Jan Heck**

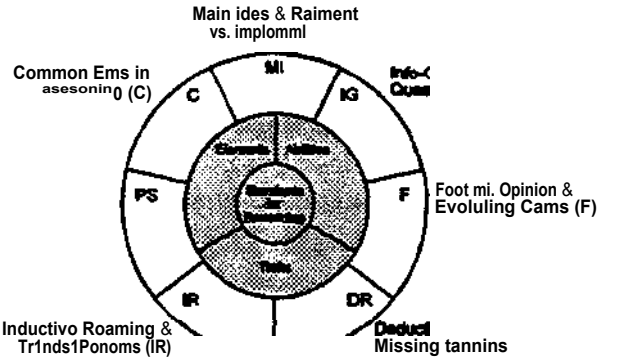
## GENERAL INTRODUCTION

The **C**ᵉ**A**ˢBI critical thinking model is based on a combination of (1) our own observations of where our students tend to have problems, and (2) the conceptual framework taught in the Critical Thinking Workshops at the Center for Critical Thinking in Sonoma, California. We've also noted how much organizing information graphically seems to help our students. Accordingly, we have divided this book into three parts.

Part I contains instructor notes, lesson plans, and student handouts related to the "core of our model (see the gray section of the diagram below). Part I materials deal with the four aspects of reasoning as presented by the Center for Critical Thinking: elements of reasoning, standards for reasoning, traits of the reasoning mind, and reasoning abilities.

Part 1:1 includes suggestions for incorporating graphic organizers into critical thinking lessons. Graphic organizers provide a visual way to organize information, which helps students encode, store, and retrieve the information.

Part III deals with the other seven critical thinking topics (the white section of the diagram below) which we have identified as important areas in cognitive retraining. Because of the breadth and depth of these areas and the diversity of students served by various agencies or educational institutions, it is impossible to do these topics justice within these pages. To meet the diverse needs, we have provided specific resources and sample lessons for these topics.



## LESSON 2: TRAITS OF THE REASONING MIND

Lesson Preparation: (1) Post central idea graph showing the four aspects of reasoning (see page 50).

(2) Photocopy student handouts entitled "Identifying Traits of the Reasoning Mind" (see pages 37 & 39) and "To School or Not?" (see page 40).

ger Review the definition of reasoning, the central idea graph showing the four aspects of reasoning, and the definition of critical thinkingg. Inform students that there will be a short quiz on these items the next day class meets. Make clear how much detail the students must provide, based on your knowledge of your students' abilities.

Inform students that today's lesson will focus on the Traits aspect of reasoning. Have them turn to page 58 of their handouts.

Ear For each of the ten traits listed:

(1) Read the short definition first, then read the longer definition to fill in details.

(2) Ask the question, "Why is this particular trait or attitude necessary in order to reason *well?"* Discuss answers.

(3) Ask for some examples and nonexamples of each trait, e.g.:

(a) How might someone show open-mindedness?

(b) How might you tell if someone is not being open-minded?

Distribute the handout entitled "Identifying Traits of the Reasoning Mind." Go through the "One-Liners I" (page 37) with the whole class. For each line, have students identify which trait or traits it demonstrates (or which trait is lacking).

ler Break students into groups. Call students' attention to "Conversation" from handout "Identifying Traits of the Reasoning Nfind" (page 39). Have each group determine which traits (or lack thereof) are evident in the speakers' comments. Then have one individual from each group report on that group's findings.

Distribute the handout entitled "To School or Not?" (page 40). Have students remain in their groups (or regroup them for **variation). Have each group** discuss the situation described and write down their responses to the questions. After groups have completed their worksheets, have them discuss their reasoning regarding the issue. Then have them provide examples and nonexamples of how well group members exhibited the traits of the reasoning mind as they participated in the discussion.

## w Homework Ideas:

**(1)** Have students select 3 traits and write down examples and nonexamples they observe.

**(2)** Have students make a central idea graph showing the traits of the reasoning mind and a brief definition of each trait

**(3)** Study for quiz, which will require students to:

- **(a)** define reasoning
- **(b)** define critical thinking
- **(c)** name the four aspects of reasoning
- **(d)** name at least three traits of the reasoning mind

**Name:** _____ **Due Date:** _____

# Handout: IDENTIFYING TRAITS OF THE REASONING MIND

## Ono-Liners I

***For each line, answer this question:*** **What trait is the speaker exhibiting (or *not* exhibiting)?**

1. **You don't know what you're talking about.**

2. **My heart wants to believe that he's a good guy, but now that I've heard bad things from three different people, I have to admit he may be dishonest.**

3. **Your argument is very convincing, but I want to hear what Joe and Jane have to say before I form a conclusion.**

4. **That red-haired kid probably started the fight — you know what tempers redheads have.**

5. **Why is it that birds can fly and humans can't?**

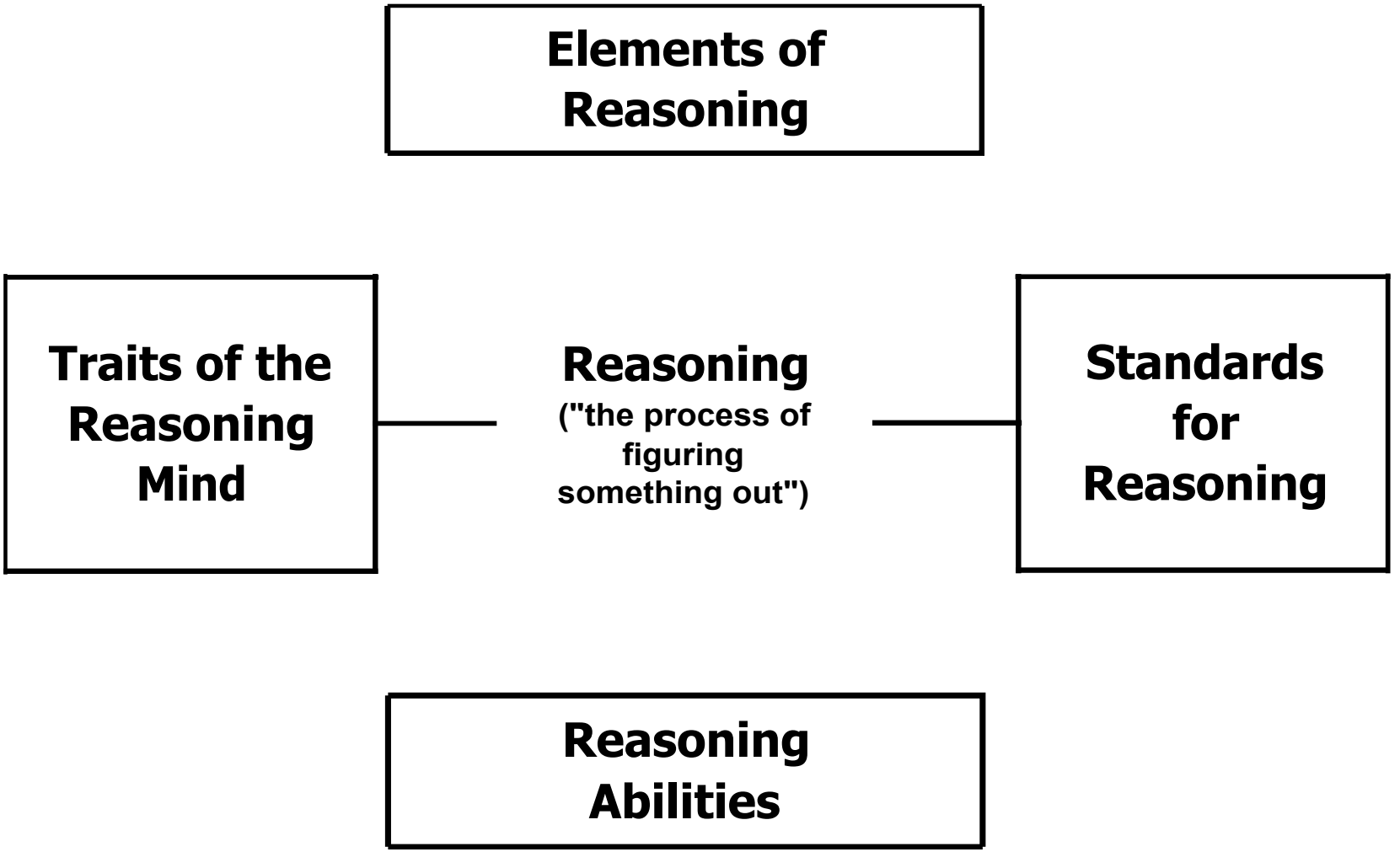
6. **I don't care what the label says, I know that song was recorded in 1985.**

**7. I know I have all the information I need and today's the election, but I just can't decide who to vote for.**

**8. I was so sure that it was you who left the oven on, but you're right, I did use it last.**

**9. I believe I'm correct, but I need to find more evidence to support my position.**

# Central Idea Graph: THE FOUR ASPECTS OF REASONING



# Sample Lesson 1: Identifying Relevant information

Michelle R. Wild

## Instructor Guide

**Part of Unit/Topic: Main Idea/Relevant vs. Irrelevant**

**Target Group: Class 1, 2, 3 or 4**

**Purpose of Lesson:**

**To enable students to identify relevant information when attending classes/lectures. This is one lesson in a series from the textbook *What Smart Students Know*.**

**Equipment/Materials Needed:**

**Overhead projector**
**Transparencies of pp. 86-87 from What *Smart Students Know***
**Handouts (blank compare/contrast diagrams)**

**Specific References:**

**Robinson, Adam (1993). *What Smart Students Know*. New York: Crown Trade Paperbacks.**

**Synopsis of Lesson:**

**The purpose of the lesson is to work with students in identifying the relevant information from classes and lectures. The lesson reviews Robinson's Question #7, "What Information is Important Here?" from *What Smart Students Know, as* it pertains to reading. The lesson then presents additional strategies for determining the important information presented in classes and lectures. The lesson is summarized and students are encouraged to explain how they will utilize the knowledge in other classroom settings. Finally, students are given an opportunity to practice their new skills while listening to a short lecture. Assessment is provided through a quiz and instructor feedback.**

**Lesson Prerequisite(s):**

**Before completing this lesson, the students should have had exposure to and/or practice in: (1) relating Question 7 from *What Smart Students Know* to reading (as opposed to lectures); (2) using compare/contrast diagrams (see pages 9-11 of *Organizing Thinking: Graphic Organizers;* full book reference contained in table on page 87).**

# Lesson Plan: Identifying Relevant Information

| **Desired Learning Outcomes:** *What do you want the student to accomplish as a result of this instructional event?* | **Instructor Activity:** *What Is the instructor doing to facilitate the desired learning outcome from Column 1?* | **Student Activity:** *What is the student doing to achieve the desired learning outcome from Column 1?* |
|---|---|---|
| **INTRODUCTION** | | |
| 1. Recognize the Importance of the cognitive skill of identifying relevant information and its relationship to being successful in school. | 1. Introduce the importance of determining which information is important in the context of classes (both lectures and reading material). | 1. Listen to introduction and take *notes.* |
| 2. Become aware of where their problems le in the area of determining the relevant information in classes (lectures and readings). | 2. Ask students what problems they've noticed in themselves related to gleaning information from classes or lectures. | 2. Students respond in writing and then volunteer to share their problems with the class. |
| 3. Identify what strategies they are currently using to determine relevant information. | 3. Ask students what strategies they are currently using in classroom situations (pertaining to determining relevant information). Examples might include note-taking, highlighting, etc. | 3. Students respond in writing and then volunteer to share their current strategies with the class. |
| **BODY** | | |
| 1. Recall information from previous lessons re: knowing what's important and what's not. | 1. Review information from beginning of Chapter 7. *Ref Robinson,* pp. *81-861* | 1. Retrieve notes from previous lessons; take additional notes. |
| 2. Compare strategies used for reading with strategies used for lectures. | 2. Distribute handout entitled 'What information is Important Here?" (page 95). Present comparison of strategies used to identify important information in reading vs. in classes/lectures. (See partially completed handout on page 96.) | 2. Using a compare/contrast diagram, organize the information being presented by Instructor. |

| **Desired Learning Outcomes:** ***What*** *do* ***you want the student*** *to* ***accomplish*** *as a* ***result*** *of* ***this instructional*** *event?* | **instructor Activity:** ***What*** *is* ***the instructor doing*** *to* ***facilitate the desired learning outcome from Column*** *1?* | **Student** Acthrity: ***What*** *is* ***the student doing*** *to* ***achieve the desired learning outcome from Column*** *1?* |
|---|---|---|
| 3. Originate additional examples of strategies. | 3. Divide students into small groups. Ask students to make further strategy comparisons. | 3. In small groups, come up with additional examples of similarities and differences between strategies for reading **vs.** classes/lectures. |
| 4. Identify various strategies used to determine relevancy in class/lecture materials, | 4. Present bulleted points from Chapter 7, using overhead projector and transparencies, *Ref* ***Robinson,*** *pp. 86-871* | 4. Take notes, **ask** questions, share experiences, stating whether they agree/disagree with bulleted points and *why.* |
| 1914110191B10:/modmiftwew- | | |
| 1. Relate the importance of determining relevant information to the classroom setting. | 1. Review lesson and make sonnection between determining **relevancy** and classroom success. | 1. Take notes and participate in idea and summary generation. |
| 2: identify personal uses of the techniques discussed during the lesson. | 2 Ask students to identify how they might use some of these techniques in a classroom setting and to identify other settings where they might use the techniques. Examples might include church sermons, conversations, doctor appointments, watching TV, etc. | 2. Students respond in writing and then volunteer to share the techniques they will use. |
| ASSESSMENT' - | P:Mii:( NM'S, , iaiMaiigniiiiitggii, .., e | |
| 1. Determine the relevant information in a lecture. | 1 a. Provide a brief lecture on a topic of interest or read a short article.<br>Ib. Provide a quiz about the lecture content; quiz should include questions re: what techniques the students used to identify the relevant information. | 1 a. Usten and take notes re: the relevant information.<br>Ib. Complete the quiz, including identification of strategies utilized while listening to lecture and taking notes. |
| 2. Understand performance on quiz. | 2. Provide feedback re: quiz performance, | 2. Evaluate quiz performance and seek remediation as necessary. |

# WHAT INFORMATION IS IMPORTANT HERE?

## COMPARE AND CONTRAST DIAGRAM

**Reading Strategies**

**Lecture Strategies**

**HOW ALIKE?**

**If you can/ decide whether or not something sounds important, assume it is and write it down.**

**HOW DIFFERENT?**

**with regard to:**

**TIME**

**EXAMPLES**

**Amount of time to determine relevancy varies, and may be in learner's control**

**Read examples in book, but try to come up with your own examples to help with further understanding**

**Very limited time to decide on what's relevant**

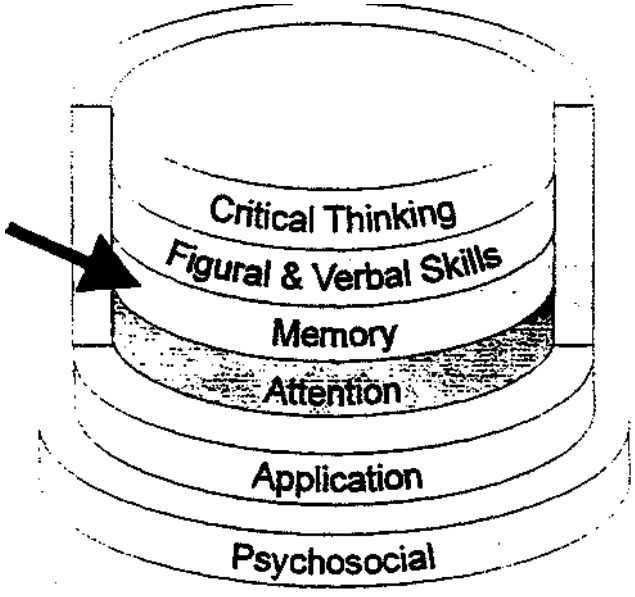
**Usually not able to come up with your own examples during lecture; write down instructors examples**

# C6A3B1

*Coastline Community College Comprehensive Cognitive-Retraining Curriculum*
*for Adults and Adolescents with Acquired Brain Injury*

# MEMORY CURRICULUM
# Instructor Notes & Student Handouts


## Bonnie J. Olsen, Ph.D.


**C⁶A³BI Model**

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## LESSON 3: MEMORY SYSTEMS OVERVIEW—LIBRARY ANALOGY

*[Ref student handouts, pages 38, 39J*

In this lesson, you will present the library analogy (as depicted in the student handouts) as a way to understand a very complex process. Memory systems theory is a theory (not fact). It provides an explanation for how we can understand memory processes, especially when impairment in memory is present. It is based on much research and will change as we learn more about memory. In addition, there are a number of other theories which offer other ways of viewing memory. Students may need to review the concept of an "analogy" before they can understand the library analogy. Discuss each aspect of the analogy, one at a time. Then, discuss how they work together in an interactive trimmer. Draw arrows on overhead or blackboard presentation to illustrate how information is processed through the various parts of the library.

Name: _____ Date: _____

# LESSON 3: MEMORY SYSTEMS OVERVIEW—LIBRARY ANALOGY

The library analogy is a simplified way to understand the different processes and systems involved with normal memory and memory problems that stem from brain injury.

**Reference Books: Semantic Memory**

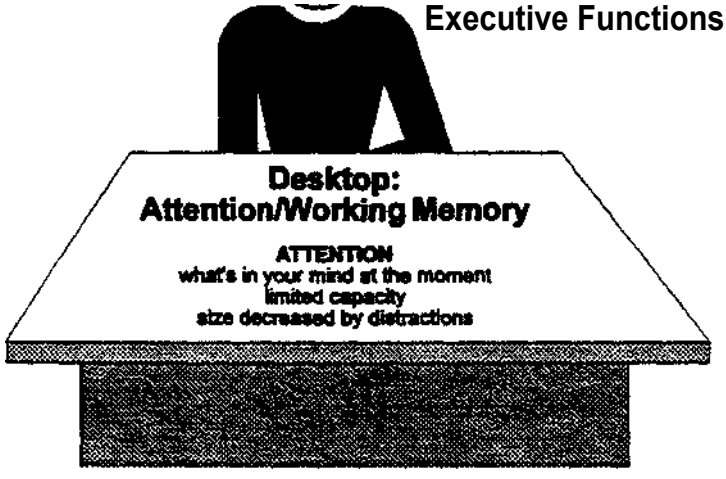
KNOW
information you learn
lasts a lone time
IIVOC/0110 SUMS

**"How-To" Manuals: Procedural Memory**

HAUNTS
thingsr Nam bow to do
by repetition
same way every Ome

**Novels & Biographies: Episodic Memory**

REMEMBER
pest 1111NWINI of your We
& plane for die future
different for each person
Inked to time & place
lasts short lime unless very important



1. **For information to be remembered, the librarian, or executive functions, must first decide: (a) do I need to remember this? (b) what information is important? (c) how should I try to remember it?**

2. **When the librarian is addressing these questions, the information is on the desk, or in your attention. This is also called working memory since it is the information you are currently working with. If the librarian is ignoring or missing the information, it "slips off the desk" and is not paid attention to. If this happens, the information will not be remembered (the book will not be in the library).**

3. **When you try to remember something, it is like trying to find a book in the library. When the information ("book") has been put in the library in the right place with lots of cross referencing, you can find it easily. If not, the book may be there but you can't get to it, so it does you little good.**

4. **If the information is about an event in your life that has occurred, it will be encoded into the episodic memory system, or autobiography section of the library. Once it's in there, or the book is shelved, it will stay for a fairly short period of time. It fades if you don't use it or if it is not very important. Every time you take that book out, it is "strengthened" and makes it easier to get out the next time. You store books about your past and about future plans here. Retrieving one of these books is remembering. It's a bit like rewinding a tape of your life to the right point and playing it back.**

5. **Information that you learn and know over long periods of time goes into semantic memory. This information is like reference books. The information is not connected to the time or place that you learned it and is usually information shared by others. When you take out one of these books it is retrieving information that you "know." Every time you take the book out, it strengthens it and you can add new information or update your reference book.**

6. **When you learn how to do something by practicing it the same way each time, you are putting a "how-to manual" into the library. It takes many repetitions to get it in, but once it's there, it is very easy to take it out and perform the behavior you learned.**

# C6A3B1

*Coastline Community College Comprehensive Cognitive-Retraining Curriculum*
*for Adults and Adolescents with Acquired Brain Injury*

# COMPUTER LAB
# Program List & Matrix, Computer Curriculum, & Student Worksheets

**Jan Heck** Editor

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# INTRODUCTION
## Jan Heck

At Coastline Community College, our Traumatic Head Injury Program students attend a 45-minute computer lab each day. Please note that we do not consider the computer lab to be a $C^6A^3BI$ component in and of itself, rather, the primary purpose of the computer lab is to reinforce what is taught in Concepts and Application classes. To that end, we have collected a number of computer programs which permit our students to practice and apply the various skills taught in our Traumatic Head Injury Program, including:

Figural Skills
Verbal Skills
Attention Skills
Memory Skills
Critical Thinking Skills

as well as various supplemental skills.

In the course of evaluating many computer programs and teaching many computer lab classes for ABI students, we have made several discoveries. First, cognitive rehabilitation software is not the only source for your computer labs. Many educational companies create software suitable for **working on the above-mentioned skills. Second, though a software program may claim to work on a certain skill, we have discovered that** it often can be used for multiple purposes. Third, there's a lot of "junk" out there to waste your software dollars on, so beware and utilize any trial period offered to you. Fourth, commercial software (e.g., games or edutainment CD-ROM titles) may be "repurposed" to address various skills in more interesting and meaningful ways than some of the educational software. Finally, the students' cognitive load may be lightened considerably by providing worksheets to track their software-related activities; they can then concentrate on the intent of the software, rather than use up limited working memory space just trying to remember what they're doing or how they should do it.

With these insights in mind, here is what is provided for you in this book:

A list of computer programs we've found valuable, complete with the publishers who offer them *[Note: While we make no claims that this list is exhaustive (after* ***all, we have severe budgetary constraints too), we can assure you that we have tried and used all the listed programs, and have found each to be appropriate for at least some levels) of students.]***

**A software matrix which lists the programs** ***and the specific skills each program targets*** **(or can be "repurposed" to target)**

**is?** Some examples of computer curriculum that we have developed, e.g., an Introduction to Windows and a class introduction to the CD-ROM "The Way Things Work"

- **Some examples of curriculum we've developed demonstrating the "repurposing" of commercial software**
- **A full set of student worksheets designed specifically for use with the computer programs we've identified herein**

## Computer Committee Members

**The following staff members from Coastline Community College's Traumatic Head Injury Program served on the C'A$^3$BI Computer Committee and contributed greatly to the contents of this book:**

**Debbie Desmond, M.A., M.S.**
**Tracy Goldberg, BA.**
**Jan Heck, B.A.**
**Zina Manneh, M.S.**
**Michelle Wild, M.A.**

# INSTRUCTOR NOTES for USING A CENTRAL IDEA GRAPH TO GATHER INFORMATION FROM *THE WAY THINGS WORK* CD-ROM

**This group activity is the second in a sequence of three related activities. Please make certain that students perform the following activities in sequence:**

- **Using Central Idea Graphs (a Concepts class group activity, see C6A3BI Critical Thinking book)**
- **Using a Central Idea Graph to Gather Information from *The Way Things Work* CD-ROM (this computer lab group activity)**
- ***The Way Things Work* CD-ROM (a computer lab individual activity; page 23)**

**or "Using a Central Idea Graph to Gather Information from *The Way Things Work* CD-ROM" is a computer lab group activity, although each student will be filling out his/her own central idea graphs. In order to prepare yourself for this activity, you should do the following:**

- **Familiarize yourself with the CD-ROM *The Way Things Work* by going through the student activity labeled "The *Way Things Work* CD-ROM" (see page 23). This also prepares you to assist students when they are ready to try the CD-ROM activity alone.**
- **Familiarize yourself with the central idea graph *(see* $C^6A^3BI$ Critical Thinking book). You have also been provided with a central idea graph that is specific to *The Way Things Work (see* page 21).**
- **Make certain that the target students have already been introduced to central idea graphs (a form of note-taking that is both graphic and verbal) in Concepts class. The purpose of the computer lab group activity is to relate that prior learning to taking notes about *The Way Things Work***
- **Select three or four machines described on the CD-ROM *The Way Things Work that* you will use during this activity to allow your students to practice taking notes on their central idea graphs.**
- **Remember that the focus of this activity is *not* to teach students how to use the CD-ROM, but rather to get them to apply their previous knowledge of central idea graphs to this particular note-taking activity.**

**To set up for the activity, do the following:**

**Hook up your demonstration computer to a large-screen monitor.**

- **Have enough copies of the "Central Idea Graph for CD-ROM *The Way Things Work"* so *that each* student can fill out three or four of them.**
- **Arrange seating so that all target students can see the large-screen monitor and take notes.**

**or Conducting the group activity should include the following steps:**

- **O Briefly review the central idea graph concept, perhaps using a familiar example supplied by the Concepts class instructor.**
- **® Hand out the copies of the central idea graph and point out how the six boxes have been labeled. Explain that these categories of information are related to how information is presented on the CD-ROM.**
- **O Make sure students understand that they need to focus on getting the information onto their graphs, *not* on how to run the program.**
- **• Call up the first machine you have selected for this activity. Have each student fill in the name of the selected machine in the central circle of the graph.**
- **6 Read aloud the short article and indicate that notes from this article may be considered "General Information." Discuss relevant vs. irrelevant information, how much should be written, etc.**
- **6 Click on some of the red words to get important definitions. -Ask students which box should contain these notes. Allow some discussion and give some guidance as to how much to write down.**
- **CD Click on the "Related Principles of Science" shelf in order to fill in the related box.**
- **® Click on the "Inventors" shelf in order to fill in that information.**
- **® Go to the timeline in order to get the information about the year the machine was invented. Use the timeline to find out two machines invented before the current machine, *as* well as two machines invented after it. Make sure students place notes in the appropriate box.**
- **• The "Other Tidbits of Info" box may be used for overflow information, for information obtained from animations, etc.**

**Continue with a second machine. As the lesson progresses, give less guidance and solicit more suggestions/answers from the students. You may want to use more than one computer hour to complete this activity.**

**Other ideas for how to relate this activity back to Concepts class include:**

- **✓ Have students take their completed graphs back to Concepts class and write a paragraph or essay about the machine. This provides practice in writing and synthesis skills, as well as an opportunity to experience the consequences of unclear or incomplete notes.**
- **✓ Have students discuss the computer lab activity in Concepts class and report what was difficult, helpful, etc. about the use of the central idea graph to take notes (e.g., does the organization into category blocks make the information *less* overwhelming, easier to remember, etc.?).**

✔ Have students break into small groups to compare their graphs (i.e., to see what different information each one chose to write down). Perhaps a fruitful discussion of relevant vs. irrelevant or clarity of notes may result.

*Name:* _____ *Date:* _____

## STUDENT HANDOUT: INIAPW'GO CD-ROM

***Map'n'Go*** **contains road maps of the U.S., Canada, Mexico, and the Car[i]bbean, including detailed maps of major cities. The CD-ROM also contains information about hotels, restaurants, campgrounds, and points of interest. With *Map'n'Go,* you can plan routes, find out what there is to see along the way, and print your route on a travel plan map.**

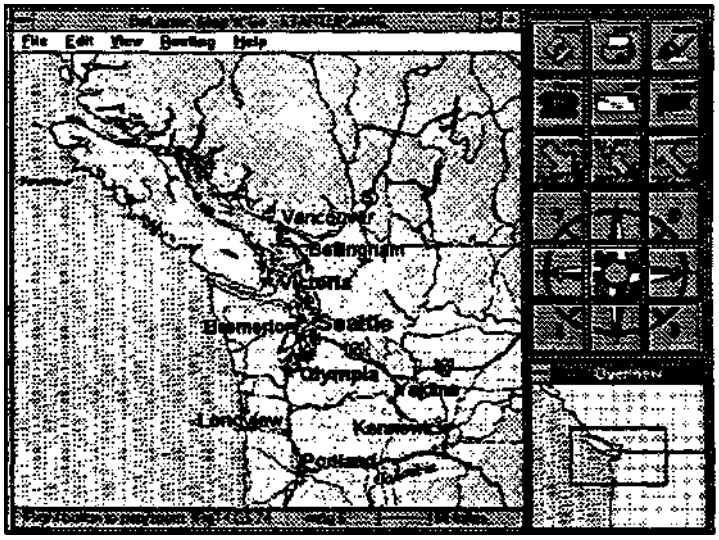
**TO GET INTO THE *MAP'N'GO* PROGRAM:**

1. **Place the *Map'n'Go* CD-ROM into the CD-ROM drive.**
2. **Go into Windows if you're not already there.**
3. **Open the CD-ROM PROGRAMS group by double-clicking its icon.**
4. **Double-click on the *Map'n'Go* icon.**
5. **Use headphones (or speakers) when directions specify.**

### MAP'N'GO, PART 1: FOLLOWING DIRECTIONS, APPLYING NEW LEARNING

air **The screen you see when you start *Map'n'Go* will look something like the example below.**

**Main Map 4**




**<- Toolbox**

**4- Compass Rose**

**4- Overview Map**

**Status Bar -)**

1. **Check off each of the following key features as you identify them on your computer screen:**
   - **Main Map**
   - **O Toolbox containing tools for the most commonly used functions**
   - **CD Overview Map that shows the area on and around the Main Map**

# Progressive Attention Training (PAT)
# Level 1—Respond to a selected color

- Program description: Playing cards will be flashed on the computer screen one at a time.

- Objective: As cards flash on the screen, respond to all cards of the color you selected (either black or red) by pressing the [Space Bar].

- Goals:
  o Display Rate 1.0 (7 consecutive trials at 90% or higher).
  o Display Rate 0.8 (7 consecutive trials at 90% or higher)
  o Display Rate 0.8 (7 consecutive trials at 90% or higher)

- Starting the program:
  O Type `PAT' at a:!>, press [Enter/Retum].
  • Select Leifel1 at menu.
  3 Press [Enter/Return] until you are at Disolav rate. Type in the display rate that you want (refer to the D. R. column below), press [Enter/Return].
  ® Press [Enter/Return] until you are at Anv changes. Type "N', press [Enter/Return].
  e Select **Black** or **Red** when asked.
  • Begin responding to the card of the color you selected by pressing the [Space Bar].

| Date | D. R. | Trial | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| | | right<br>wrong<br>miss | | | | | | | |
| | | right<br>wrong<br>miss | | | | | | | |
| | | right<br>wrong<br>miss | | | | | | | |
| | | right<br>wrong<br>miss | | | | | | | |
| | | right<br>wrong<br>miss | | | | | | | |
| | | right<br>wrong<br>miss | | | | | | | |

# Main Idea E

- Program description: Written passages are presented for you to read.

- Objective: Read a passage then answer the questions that follow.

- Goals: Given below.

- Starting the Program
  - O Type "**AUTOEXEC"** at a:%>, then press [Enter/Return].
  - CD Press [Enter/Return].
  - O You have no Class I.D., just *press* [Enter/Retum].
  - O Type your first name, press [Enter/Retum]. Middle initial is not needed, just press [Enter/Retum]. Last name is not needed, just press [Enter/Return]. Type °Y R when asked if your name is printed correctly, press [Enter/Return].
  - **O Type toda's date, press [Enter/Retum]. Type `r, press [Enter/Retum].**
    Select the passage you want to read (refer to Goals below), then press [Enter/Retum].

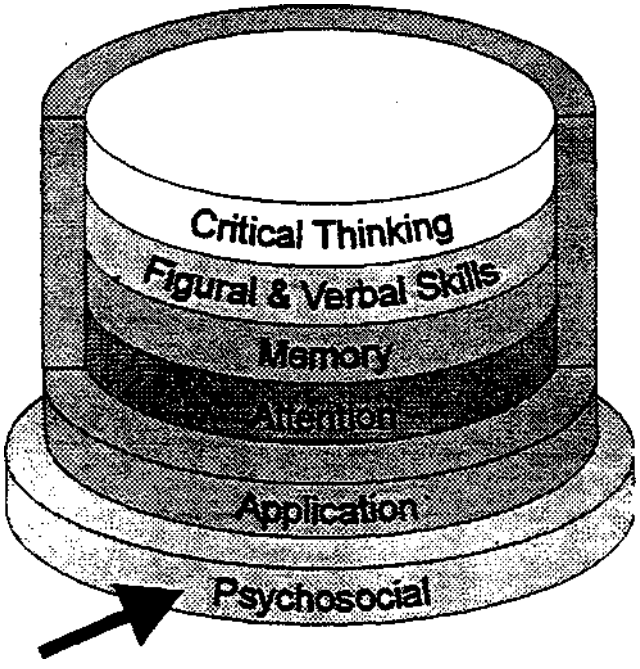
| Date | Goals | Scores | | | |
|---|---|---|---|---|---|
| | 1) DIFFERENT KIND OF LAW **(Pc] to stop, (Esc) to qui/ not to save scores)** | **problems m module** | **problems completed** | **answered cottoctlY. let** | **answered coffe*. 2nd** |
| | | | | | |
| | 2) THE CLASH OF THE BIG HORNS **((Esc) to stop,** Mac) **to quit,** *ne* **not to save scores)** | **problems in module** | **problems completed** | **answered correctly, 1st** | **answered correctly, 2nd** |
| | | | | | |
| | 3) A CURIOUS CARNIVORE **(lEscl to stop. !Esc] to quit, ir not to save scores)** | **problems In module** | **problems completed** | **answered** *correctly* **, 1st** | **answered correctly, 2nd** |
| | | | | | |
| | 4) MYSTERIES UNDER MEXICO CITY **((Esc) to stop. [Esc] to quit, "W not to save scores)** | **problems in module** | **problems completed** | **answered correctly, 1st** | **answered correctly, 2nd** |
| | | | | | |
| | 5) A UNIQUE DESERT ROAD **((Esc] to stop, (F-scj to qut not to save scores)** | **problems In module** | **problems completed** | **answered comectlY. 1 et** | **answered cortecuy. 2nd** |
| | | | | | |
| | 6) **THE SINKING OF** AN UNSINKABLE **SHIP asci to stop, (Escl to quit, 1 not to save scores)** | **problems in module** | **problems completed** | **answered correctly, 1st** | **answered correctly, 2nd** |
| | | | | | |

# C6A3BI

*Coastline Community College Comprehensive Cognitive-Retraining Curriculum for Adults and Adolescents with Acquired Brain injury*

# PSYCHOSOCIAL COMPONENT Processing .& Curriculum

**Jan Heck** Editor




**$C^6A^3B1$ Model**

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# GENERAL INTRODUCTION TO C6A3BI PSYCHOSOCIAL COMPONENT

**Kimberley Peterson**

## GENERAL INTRODUCTION

**As the $C^6A^3BI$ Model indicates, the other layers of the cognitive retraining curriculum rest upon the psychosocial layer. This reflects the importance accorded to psychosocial factors in our model. At Coastline's THI Program, our students attend a 45-minute psychosocial class each day. The class is designed to deal with the psychological and social difficulties that many individuals face after a brain injury. The psychosocial class.itself consists of two separate components: processing/problem-solving and curriculum.**

***Part I*** **of this book deals with the *processing/problem-solving part* of the psychosocial component. Students with sufficient insight are involved in processing. Briefly, processing enables students to discuss brain injury-related issues with their peer group and gain valuable insight into their behaviors and interpersonal skills while obtaining support. The problem-solving component is the alternative class for students who have limited or no insight. As in the processing component, the students are given an opportunity to discuss issues, but receive much more structure and support. These two options are discussed in great detail in Part I.**

***Part II*** **includes the *curriculum* we've developed for the psychosocial component. Four complete units of instruction are presented, each including lecture notes and student handouts. The four units are:**

**Pre-Injury Personality**
**Neuropsychological Effects of Brain Injury**
**Coping with Brain Injury**
**Life After Brain Injury: What Next?**

## Psychosocial Committee Members

**The following staff members from Coastline Community College's Traumatic Head Injury Program served on the $C'A^3BI$ Psychosocial Committee and contributed greatly to the contents of this book:**

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**Jan Heck, B.A.**
**Zina Manneh, M.S.**
**Kimberley Peterson, M.S.Ed., MFCC**
**Celeste M. Ryan, M.S.**
**Stacey Hunter Schwartz, Ph.D.**

## EXAMPLES OF PROCESSING TOPICS

**The following are actual topics students have brought up in processing class over the years:**

- **Student expresses worry about how his peers will accept him when he returns to work.**
- **Student expresses concern over family's unrealistic expectations about what the student can handle.**
- **Student expresses concern about how his family blames physicians for student's disability. Student credits the same physicians with saving his life.**
- **Student expresses concern over isolation of self from old friends and family members.**
- **Student expresses frustration regarding the amount of energy and effort it takes to do what seems to be the simplest of tasks.**
- **Student expresses concern regarding members of her family who are in denial about the impact that the student's injury has had on her ability to function.**
- **Student expresses concern over socializing with large group of friends.**
- **Student attends a reunion of friends and family. Family and friends comment on how much progress the student has made.**
- **Student tells group that she has not disclosed that she has a head injury and is fearful about how this may change how her peers and supervisors interact with her.**
  **Student expresses concern over how others perceive him socially—"The Social Nerd."**
- **Student expresses feelings associated with an incident in class where a student "blew up" at a peer and the instructor.**
- **Student expresses remorse about "blowing up" in class.**
- **Student expresses concern about the potential of his current employer going out of business.**
- **Student expresses frustration about the THE Program. Student feels that she doesn't really need the program any longer; in fact, she feels the program is "holding her back."**
- **Student expresses concern over an upcoming event that the students are organizing. Student asks questions such as, "Will the event be as good as last year?" "Is the group organized as well as they should be?"**
- **Student expresses concern regarding an upcoming family celebration.**
- **Student with attendance problems expresses concern over whether he will be allowed to continue attending the program. He states that he wants to continue to attend, although recently he has been having difficulties on an emotional level which have impacted his ability to attend.**
- **Student expresses disappointment in others' behavior during a recent guest speaker's lecture.**
- **Student Update—Student shares with group progress she has made organizing a "Mothers' Group."**
- **Student expresses deep sadness associated with the reactions that her husband and in-laws have had to her head injury.**

- Student expresses concern about attendance policy. Student does not understand why she has to comply with the policy since she is here for personal improvement rather than "credit."
- Student expresses concern over the recent diagnosis of Alzheimer's for her mother-in-law. She states that handling her own trials and tribulations is about all she and her immediate family can handle, so when other "bad things" happen, she states that she just falls apart.
- Student.shares enthusiasm about discovering that she was able to physically handle her infant while involved in a swimming lesson.
- Student contemplates quitting the program.
- Student expresses concern over graduating from the program. Student expresses fear about the future and how realistic his goals are.
- Student feels that family members blame student for all the problems that the family is going through.
- Student expresses the need to be treated like a "normal" person.
- Student expresses the need to be have her accomplishments acknowledged by her spouse.
- Student expresses frustration over the necessity of dealing with governmental agencies like the Social Security Office.
- Student shares with her peers the experience of returning to her former place of employment.
- Student expresses concern over the fact that family members cannot see the student's disability, they act as though he is perfectly fine (back to normal) and do not understand why he is not working.
- Student expresses concern over the recent change in supervisor at work. Student states that his concern is primarily based on the fact that he does not adapt to change as well as he used to.
- Student expresses concern over taking her first exam in her masters program.
- Student updates her peers on her first exam—she got an A!
- Student apologizes for his reaction to an assignment in an earlier class.
- Student expresses sadness about the finalization of his divorce.
- Student expresses concern over an upcoming surgery.
- Student expresses feelings stirred up by wearing a suit that he formerly wore to work.
- Student expresses anger towards staff. "Staff members do not help enough."
- Student expresses sadness associated with: "One Year Anniversary since my surgery—What should I do?"
- Student recognizes that she is no longer able to be empathetic of others.
- Instructor expresses frustration over student's recent lack of motivation.

# LESSON 2: SELF-IMAGE

**Purpose of Lesson:** **To help the students gain an accurate understanding of their self-image prior to their brain injury, how it is relevant to their rehabilitation process and how this knowledge can aid in identifying personal strengths and weaknesses**

**Lesson Preparation:** **(1) Photocopy Psychosocial Assignment #3 (Self-Questionnaire) for students (begins on page 61).**
**(2) Obtain and read Ben-Vishay and Diller (1993) article entitled "Cognitive Remediation in Traumatic Brain Injury: Update and Issues." Prepare overhead with excerpts appropriate for your students. If desired, photocopy overhead for use *as* student handout.**

**Today, we're going to discuss self-image. This area addresses issues such as: Prior to your brain injury, did you like yourself? Did you think you were valuable and important in the world? Any other examples from the class of what self-image could describe? Why might understanding your self-image prior to your brain injury be helpful in your rehabilitation process?**

***Encourage class members to generate ideas about what "self-image" could refer to and how understanding their self-image prior to their brain injuries could help them identify personal strengths and weaknesses.***

## Investigation Source: Self-Questionnaire

**In our quest for understanding who you were before your brain injury, it seems logical to begin by asking you. You will therefore be completing a Self-Questionnaire designed to get your perspective of yourself prior to your brain injury.**

**It is possible to have a different assessment of yourself prior to your brain injury than did others. This difference in perspective can be small, large, or in-between. What might it indicate if the difference between your assessment of yourself and your life and that of your friend or family member is small? What may be indicated if the difference is large? How may a significant difference impact your rehabilitation efforts? How might you benefit from learning how similar or dissimilar your perspective and your friend/family member's perspective are?**

**Assignment:** ***Distribute Psychosocial Assignment #3, Self-Questionnaire. Read over each question with students to ensure that each question is understood***

***When students have completed their self-questionnaires, exploration of their experience is desirable. This can be accomplished by a class discussion, small group discussions, or individual written assignments. Depending on the students' abilities, various questions can be***

*posed such as, "Did any questions on the questionnaire surprise you?" or "Which questions were most interesting or important to you?"*

**Assignment:** *Distribute handouts with excerpts from the Ben-Yishay and Diller (1993) article. As appropriate for students, assign for home reading or as a class or small group activity. This article was chosen to facilitate a more in-depth understanding of the importance of understanding various aspects of the individual Encourage students to explore the concepts discussed in the article as appropriate for their abilities.*

Name: _____ Due Date: _____

# Pre-Injury Personality: Psychosocial Assignment #3 Self-Questionnaire

**Student:** **This questionnaire is to be completed by you. The goal of this activity is to obtain your self description prior to your brain injury.**

***Please remember to respond to the items according to who you were prior to your brain injury.***

## L Self-Image

1. **How would you describe your self-esteem prior to your brain injury?**

   Low 1 2 3 4 5 High

2. **Did you set high standards** for yourself?

   Low Standards 1 2 3 4 5 High Standards

3. **In general, how competent did you feel?**

   Incompetent 1 2 3 4 5 Competent

4. **How important were the opinions and judgments of others to you?**

   Not Important 1 2 3 4 5 Important

5. **How important did you feel as part of the world?**

   Not Important 1 2 3 4 5 Important

6. **Comments:** _____

## IL Work Functioning

7. **How much initiative did you take in regard to your employment?**

   Lacked Initiation 1 2 3 4 5 Initiative

8. How important was your job to you?

Not Important 1 2 3 4 5 Important

9. How stable were you in your job (did you change jobs frequently)?

Unstable 1 2 3 4 5 Stable

10. How satisfied with your job were you?

Unsatisfied 1 2 3 4 5 Satisfied

11. Comments: _____

## EL Relationships

12. How important were other people to you?

Not Important 1 2 3 4 5 Important

13. How dominant did you prefer to be in relationships?

Non-Dominant 1 2 3 4 5 Dominant

14. How long did it take for you to become close or "open up" to a person?

Quickly 1 2 3 4 5 Slowly

15. Did you prefer to be alone or with others most of the time?

Alone 1 2 3 4 5 With Others

16. Did you prefer to keep most others at a distance or to bring them close and connect?

Distance 1 2 3 4 5 Close

17. Were you a leader or a follower in groups?

Leader 1 2 3 4 5 Follower

18. Comments: _____

# LESSON 11: UNDERSTANDING YOUR BRAIN INJURY

**Purpose of Lesson:** To assist students in gaining a better understanding of their brain injuries and the implications associated with their neuropsychological changes

**Lesson Preparation:**

(1) Photocopy Psychosocial Assignment #2 for students (see page 168).
(2) Photocopy "Medical Records Worksheet" for students (see page 169).
(3) Photocopy "Vocabulary List" for students (begins on page 170).
(4) Photocopy "Brain Map" for students (see pages 174 and 175).
(5) Photocopy Psychosocial Assignment #3 for students (see page 176).

Neuropsychological effects of brain injury is a term which refers to brain-behavior relationships. So when we talk about the neuropsychological effects of your brain injury, we are talking about the behaviors that are caused by brain functioning or dysfimctioning. Researchers have differing opinions. Some believe that it is possible to identify particular brain areas that are associated with certain symptoms if that brain area is damaged. Most researchers do not believe it to be that simple; instead, they believe that there are many interactions among brain structures to predict symptoms from damage in certain areas or structures. However, it is clear that some brain &fictions, such as the use of language, are generally found in a certain area of the brain.

You will be examining your medical records to identify the brain structures/regions which have been injured. Then you will learn about the common changes associated with injury to those areas.

This activity will involve:

(1) obtaining information about the nature of your brain injury from a reliable source, such as your medical records and your neuropsychological testing reports;
(2) recording information about your brain injury on a brain diagram; and
(3) gaining an understanding of the function of the brain structures which were injured and the consequences of the injury.

We will approach this project one step at a time. We will begin by reviewing the necessary documents to identify your brain injury area. Once the injured brain structures/regions have been identified, you will record this information on your own "Brain Map" so it will be available for you to review at any time in the future. Finally, you will learn about the function of the injured brain area and the possible behavioral, emotional, interpersonal, or cognitive consequences of an injury to that specific area. When you are finished, you will have a personalized "manual" for your brain injury which will have answered, hopefully, many of your questions about changes that have occurred since your brain injury.

*Each student should be assisted with determining the best way to obtain accurate information about the location of brain injury, whether it be from their neurologist, neuropsychological testing report, etc. The students may be given a certain amount of time to obtain their records, after which the students can work independently during class reviewing their records. Assistance from an instructor will likely be required as such records are usually overwhelming for the students.*

*Explore the students' feelings about this activity. In the event that an individual has strong negative feelings and does not want to research her medicallneuropsychological records, the instructor should gather the injury areas for the individual. An alternative assignment for the individual may also be appropriate, depending on the individual and the circumstances.*

**Assignment: Psychosocial Assignment #2.**

**The idea of researching what is likely the most traumatic event of your life may be an unpleasant prospect, although informative. How many of you have worries or concerns about reading your medical records? What are those worries or concerns? Do you have concerns about the possibility of reading information in your medical records that would be upsetting to you?**

*Prior to the date set for reviewing the medical/testing records of the students, remind students to bring their records (if applicable) and a highlighter with them. The instructor may also consider storing the student's records in advance of use.*

**Activity:** *Distribute the "Medical Records Worksheet," "Vocabulary List," and "Brain Map" handouts.* **Now we are going to begin actually looking through your medical/testing records. You will need your medical/testing records, a highlighter, a "Medical Records Worksheet," a "Vocabulary List," and a "Brain Map."**

**Begin by referring to your "Medical Records Worksheet";** *it* **will guide you through this process. A "Vocabulary List" is provided for you to help you understand some of the unfamiliar words you might be curious about in your medical records. When you have located the brain injury areas, enter these on your "Brain Map" under the heading "Injury Areas."**

*Following the completion of reviewing and recording information about the students' brain injuries, discuss their experiences and feelings about this activity.*

**Activity: Now that you have gathered information about the injured area(s) of your brain, you'll need to learn about the neuropsychological changes associated with injury to those particular areas. Enter this information on your "Brain Map" under the heading "Neuropsychological Changes Associated with Injury Areas." For such information,**

**refer to your notes from the lesson on brain function and dysfunction.** ***The instructor may need to use additional references to help students learn about changes associated with their particular area(s) of injury. "Common Neuropsychological Changes Following Brain Injury" (page 199) may be helpful here.***

**Assignment:** **Psychosocial Assignment #3.**

**Activity:** ***Optional. Students can present their findings to their peers in an oral presentation format.***

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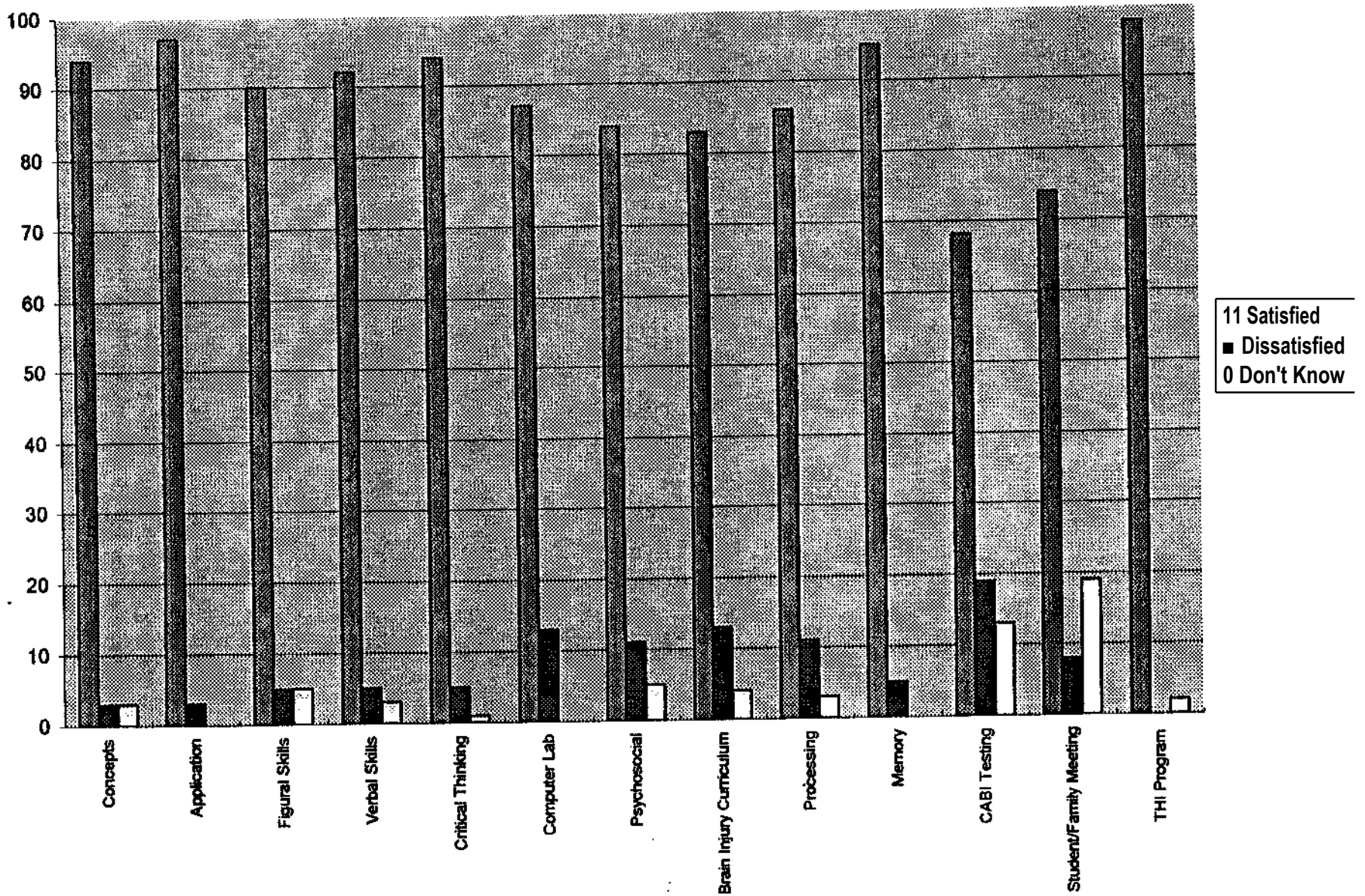
# THSdent
## Satisfaction Survey



# C6A3RI

*Coastline Community College Comprehensive Cognitive-Retraining Curriculum for Adults and Adolescents with Acquired Brain injuries*

## ORDER FORM

❑ $500 **Overview of $C^6A^3BI$ Model** & **How to Use Package** (free with any purchase)

❑ $500 **Assessment Instrument*** Includes two equivalent forms (for pre- and post-testing). Each form contains 14 sub-tests with automatic links to prescriptive curriculum. (Six 3'/2" disks)

❑ $500 **Psychosocial Curriculum.** Describes conceptual framework of psychosocial class including processing and curricular components. Includes lesson plans with lecture notes and discussion guidelines, class activities, student handouts and homework assignments for four instructional units targeted for brain injury survivors (i.e., Pre-Injury Personality, Neuropsychological Effects of Brain Injury, Coping with Brain Injury, and Life After Brain Injury: What Next?).

❑ $375 **Memory** & **Attention.** Includes lesson plans with lecture notes and discussion guidelines, class activities, student handouts, homework assignments, and computer disk with multimedia lesson illustrating types of attention. Applies theoretical notions of memory to practical life situations. (One 3Y2" disk)

❑ $250 **Computer Curriculum.** Comprehensive list of commercially available software provided. Each program is coded to reflect the cognitive deficits which it is best suited to remediate. Information on software vendors is included. Curriculum on various computer skills and student manual with worksheets for all software programs is also provided.

❑ $250 **Critical Thinking.** Includes lesson plans with lecture notes and discussion guidelines, class activities, student handouts and homework assignments plus sample lesson plans. Recommended reference list provided.

❑ $1500 **Get the entire package for $1.500. An $1,875 value. Save $375!**

**Assessment instrument is designed to assist instructor in identifying and prescribing relevant course curriculum. The prescribed materials are not intended to take the place of interactive instruction and/or cooperative learning.*

| | | |
|---|---|---|
| **Organization Name** | | |
| **Contact Name** | | **Phone #** |
| **Address** | | |
| City | State | |

**Payment Method (Check One)**

❑ **I am** enclosing a check or money order for the **total** order **amount, made payable to CCC Foundation.**

• My organization's **Purchase** Order is attached. P.O. #_____

# Course Materials

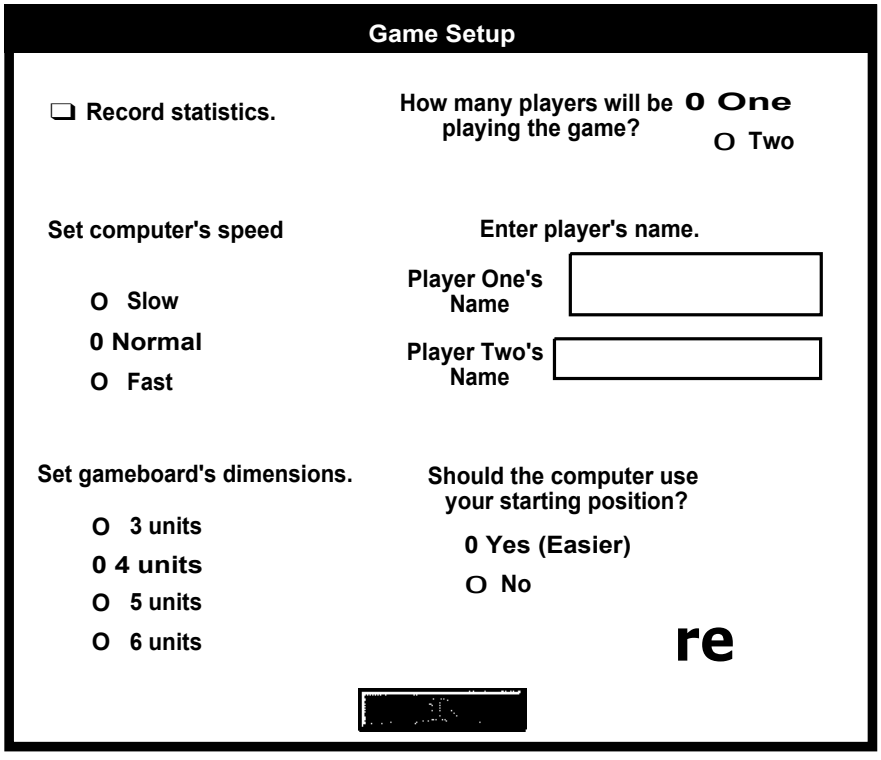
The following materials were developed by Becky Stone of College of Alameda and Merrit College.

9

# How to Use Think Ahead*

Figural

1. Boot the computer.
2. Start Windows.
3. Double click on the icon for **Becky's Class.**
4. Double click on the icon for **Think Ahead.**
5. Choose **Play Think Ahead Figural.**
6. The following Dialog Box will appear. Select the items assigned by your teacher, then click on OK.




7. When the **game screen** comes up, study the matrix of boxes and pick a box to start in by clicking it with the mouse. The computer will tell you how many squares it can remove. Write this number down on the score sheet.
8. Click on squares, moving in a trail that goes either to a box of the same color or the same shape. You may jump over boxes, but you may NOT go diagonally.
9. Record your score on the score sheet.
10. Click on the **Done** button to start another game.
11. The following choices are available in the Options pull-down menu:

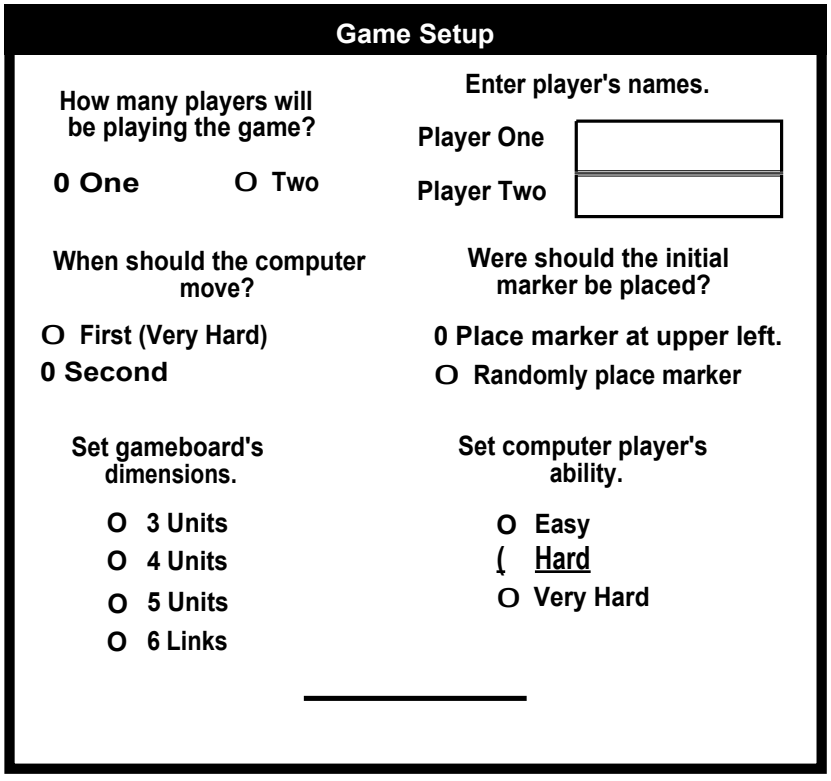
    Game Setup
    Reset Board
    Reset Marker
    New Game
    Quit Game

* **Think Ahead is a product of Critical Thinking Press and Software.**

# How to Use Think Ahead*

Numeric

1. Boot the computer.
2. Start Windows.
3. Double click on the icon for **Becky's Class.**
4. Double click on the icon for **Think Ahead.**
5. Choose **Play Think Ahead Numeric.**
6. The following Dialog Box will appear. Select the items assigned by your teacher, then click on OK.




7. When the **game screen** comes up, start at the marked square in the upper left corner, and click on a number in either the same row or same column. You receive that many points. The computer will then pick another square and receive points for it. Continue to alternate turns with the computer, trying to get the most points by the end of the game. Remember, you may jump over boxes, but you may NOT go diagonally.
8. Record your score and the computer's score on the score sheet.
9. Click on the **Done** button to. start another game.
10. The following choices are available in the Options pull-down menu:

    Game Setup
    Reset Board
    New Game
    Quit Game

# Think Ahead*
# Score Sheet

**Name:** _____

| Date | Game Type | Gameboard Size | Computer's Score | Your Score |
|---|---|---|---|---|
| | Figural | | | |
| | Figural | | | |
| | Figural | | | |
| | Figural | | | |
| | Figural | | | |
| | Figural | | | |
| | Figural | | | |
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| | Figural | | | |

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# Think Ahead*
# Score Sheet

**Name:** _____

| Date | Game Type | Gameboard Size | :Computer's: fl | Computer's Score | Your Score |
|---|---|---|---|---|---|
| | Numeric | | | | |
| | Numeric | | | | |
| | Numeric | | | | |
| | Numeric | | | | |
| | Numeric | | | | |
| | Numeric | | | | |
| | Numeric | | | | |
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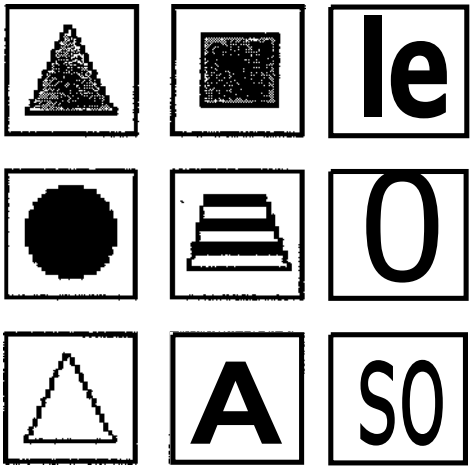
# Think Ahead*
# Worksheet

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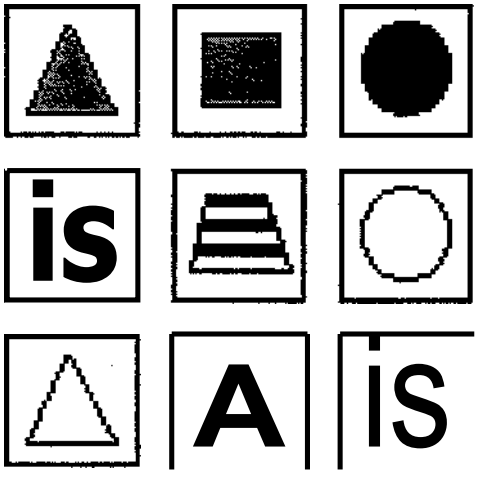


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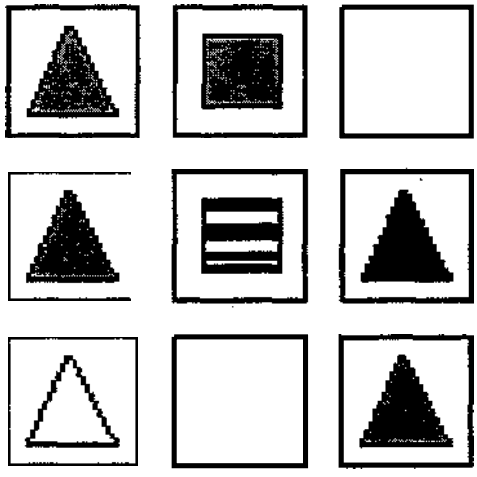

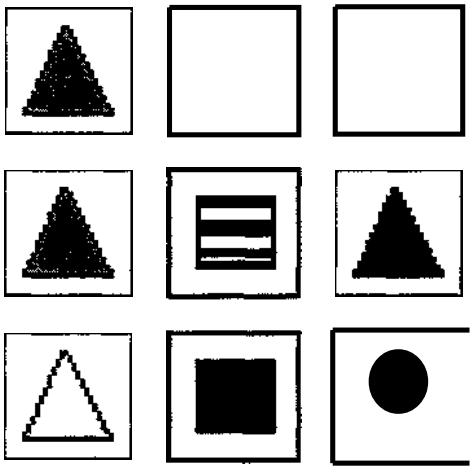

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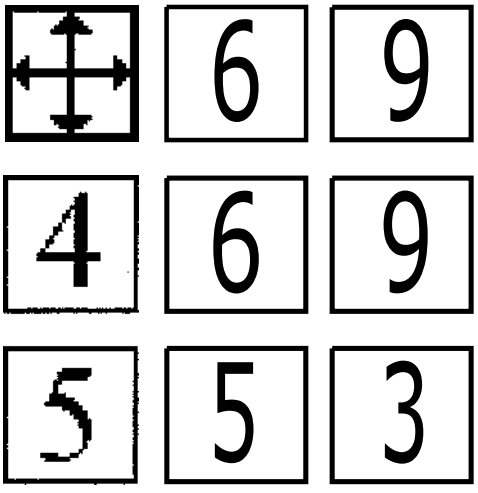


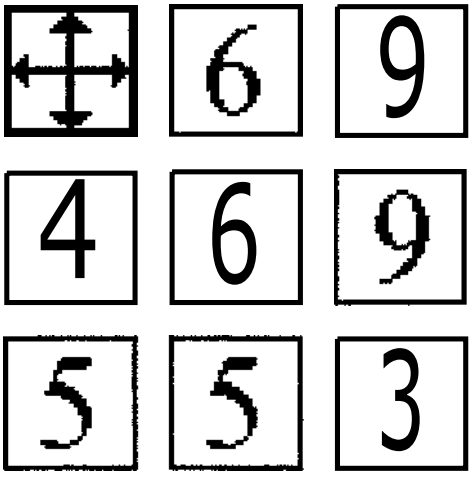


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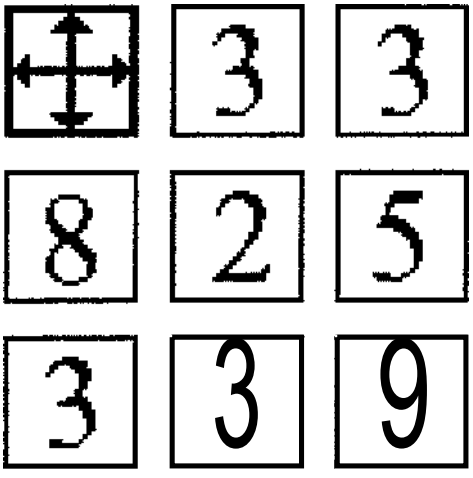


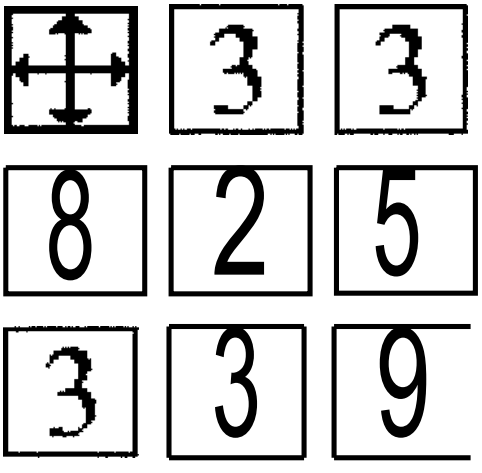


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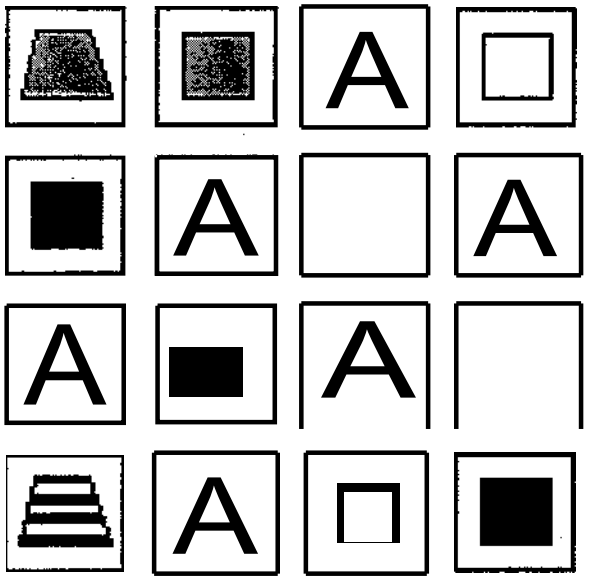

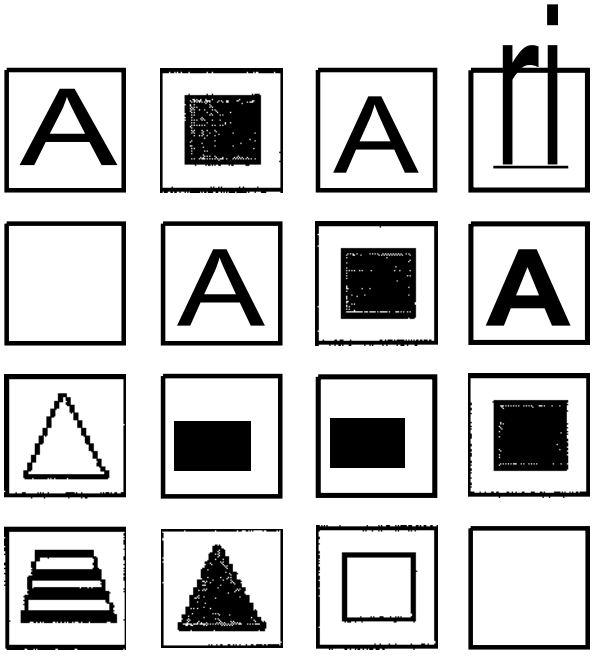

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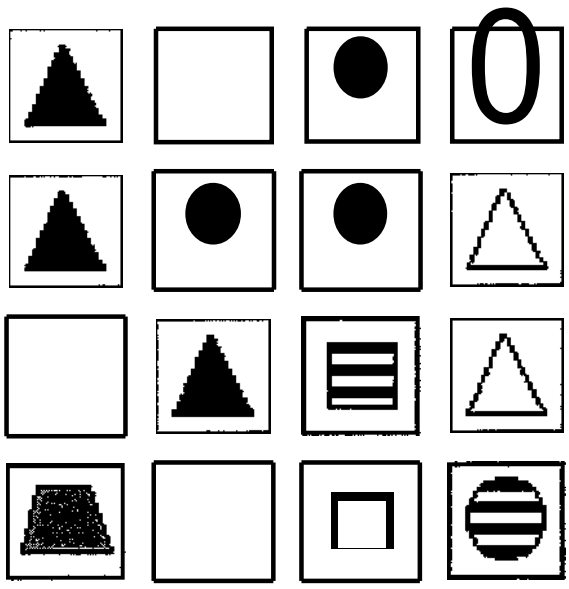

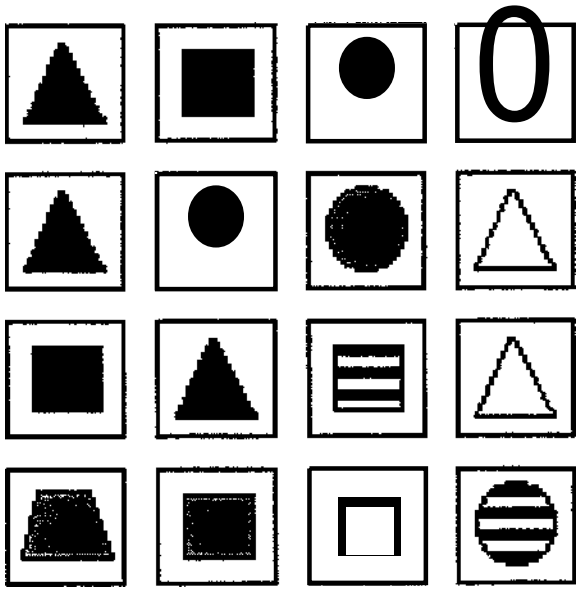

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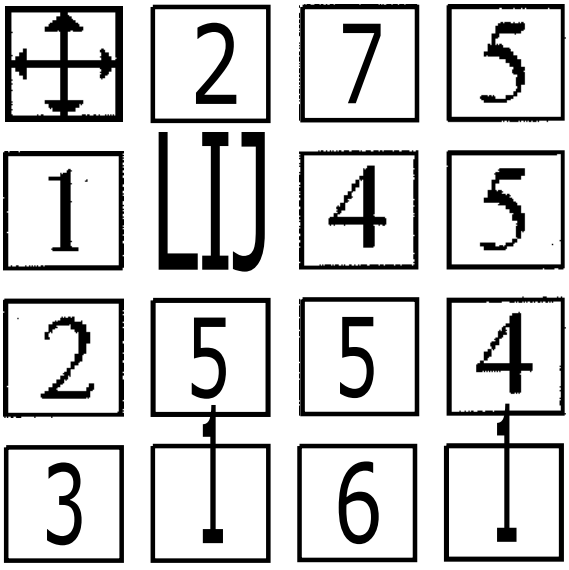


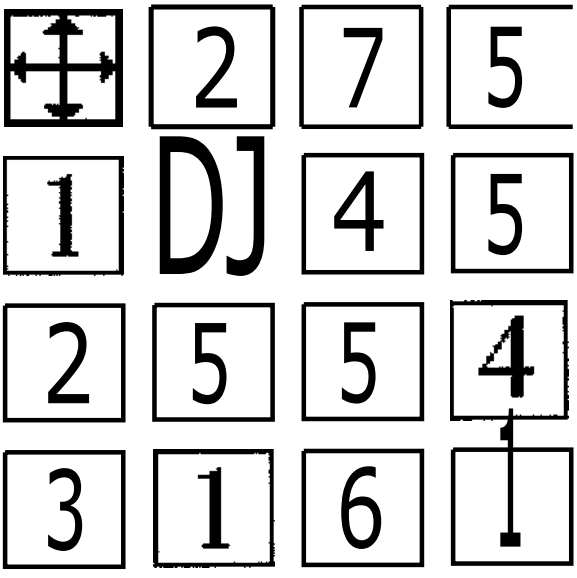


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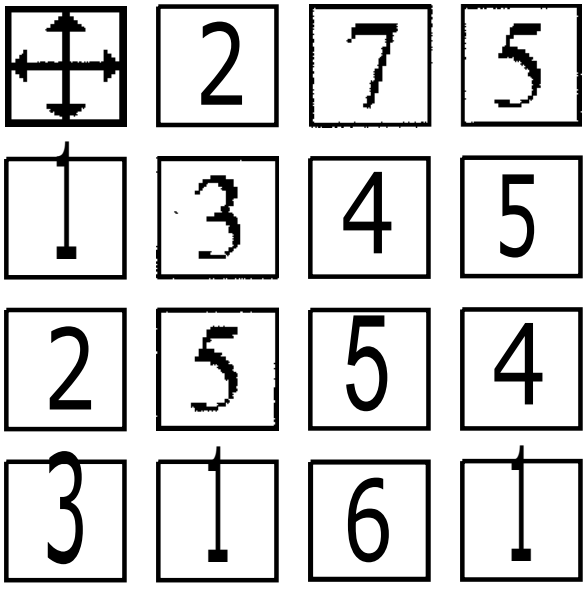


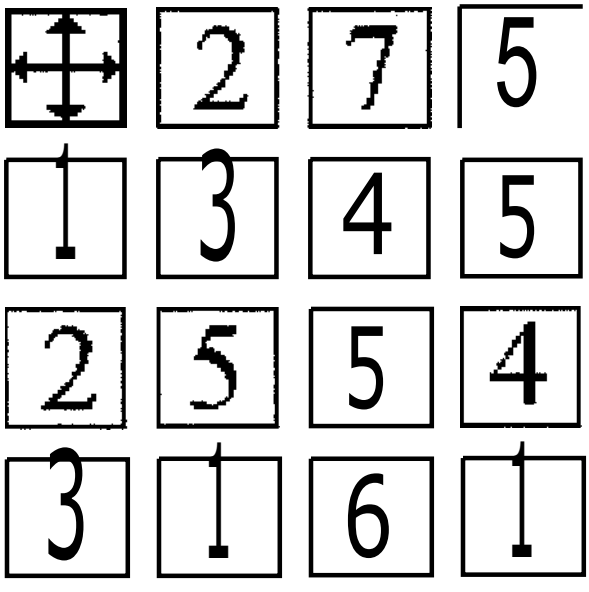


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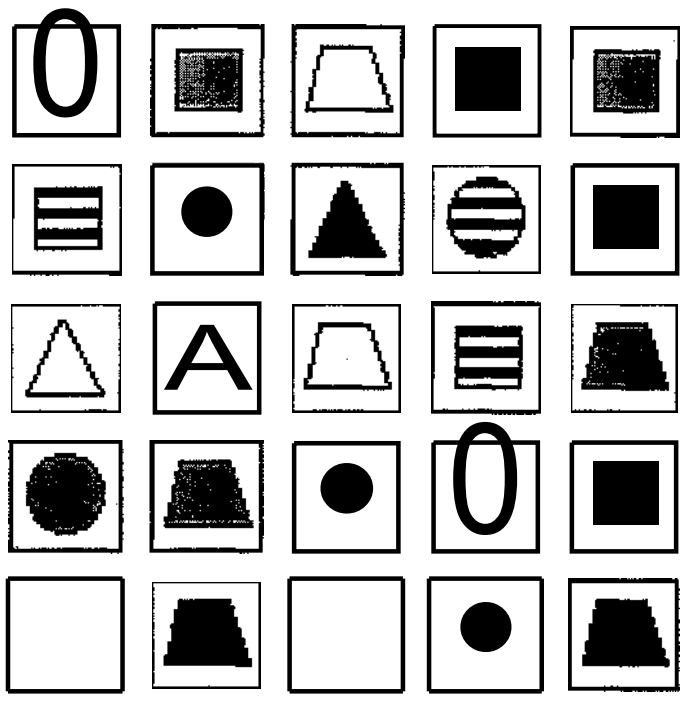

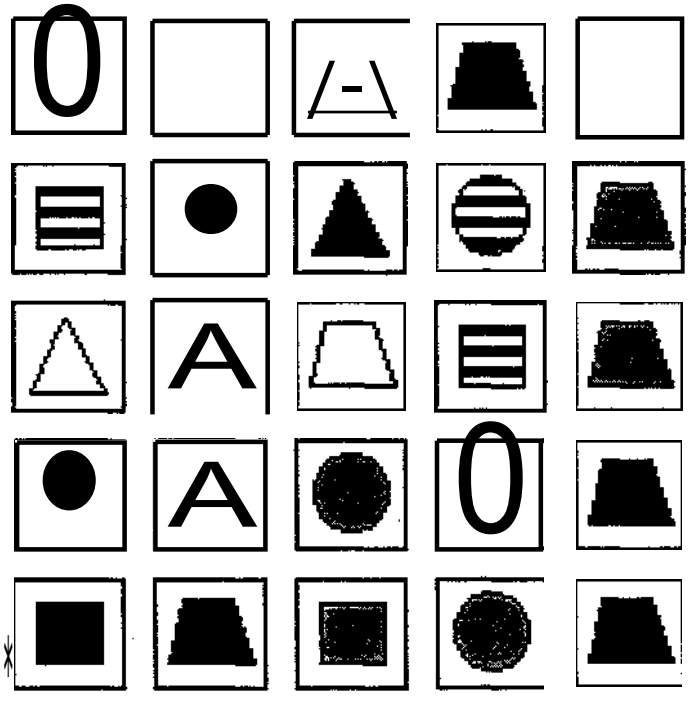

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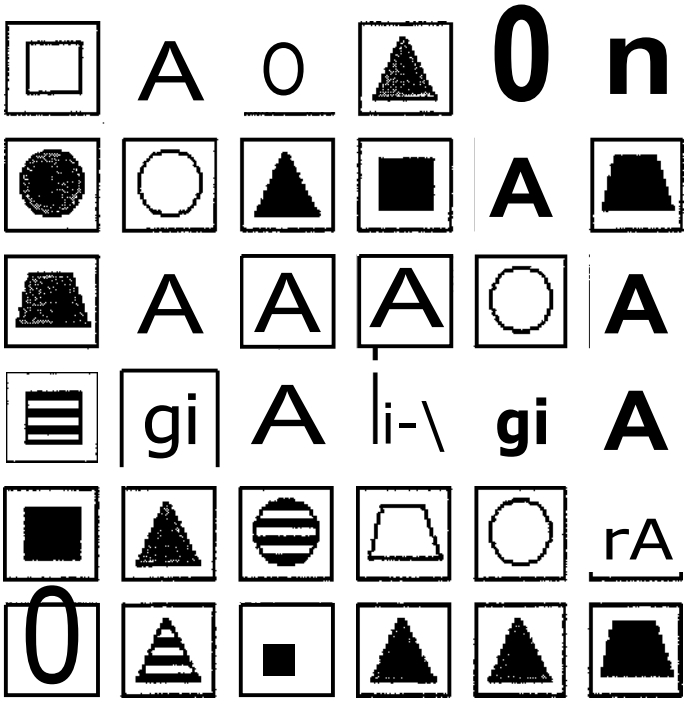

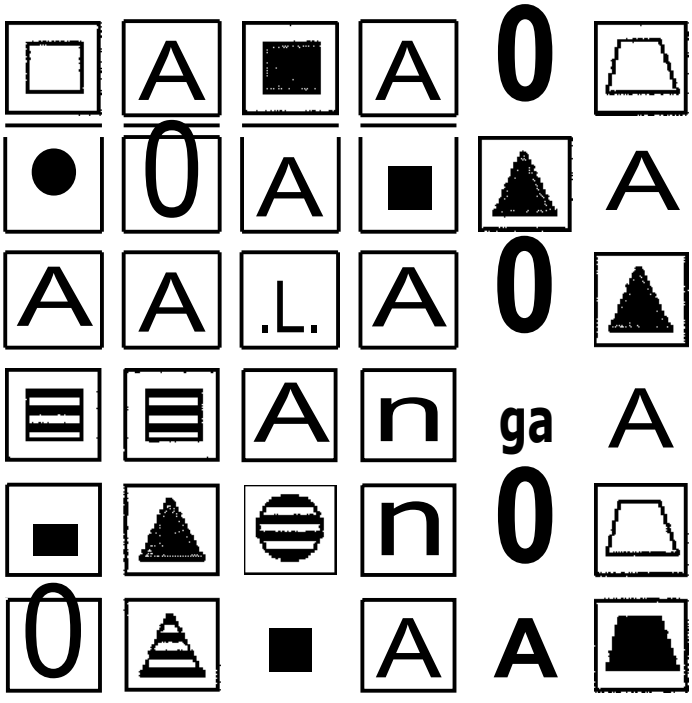

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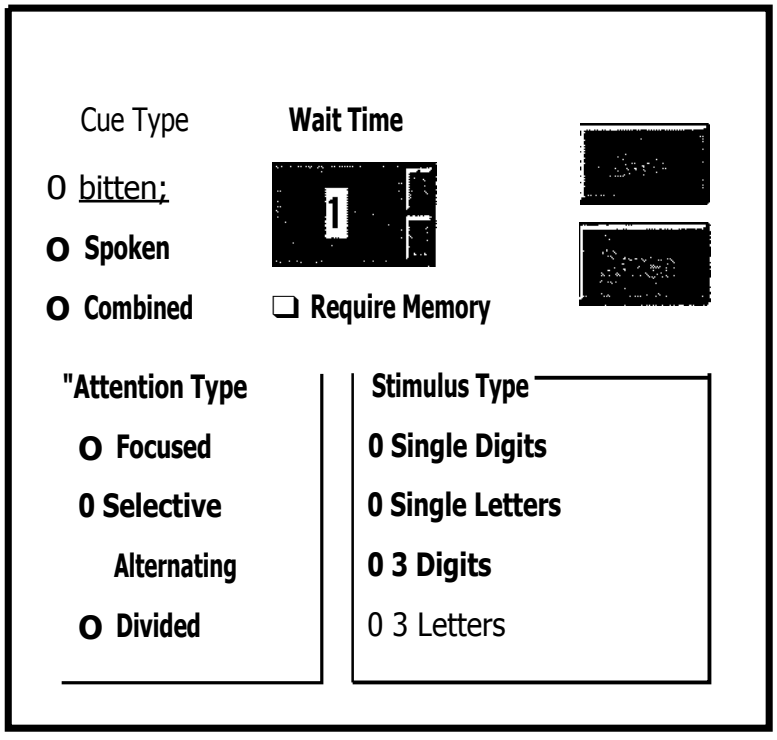
# How to Use
# Hierarchical Attention Training Software*

1. Boot the computer.
2. Start Windows.
3. Double click on the icon for **Parrot Plus Programs**
4. Click on the icon for Hierarchical Attention Training.
5. Pull down the **Setup** menu.
6. Double click on **Lesson Design.**
   The following Dialog Box will appear. Select the items assigned by your teacher.




7. Click on the **Save** button.
8. Click on the GO button or press the Enter key to start the game.
9. To play the game, you may either click on the buttons with the mouse or press the Enter key.
10. To stop the game, pull down the File menu and select **End Lesson.** Click on Yes or hit the Enter key.
11. When the score screen is displayed, copy your scores to the score sheet.
12. To exit the program, pull down the File menu and select **Exit Program.** Click on Yes or hit the Enter key.

***Hierarchical Attention Training Software is a product of Parrot Software, Inc.**
**howattn.doc**

# Hierarchical Attention Training*
# Score Sheet for
# Focused and Selective Attention

Name: _____ Date: _____

| Attention Type | Stimulus Type | Cue Type | Memory Required | Total Tried | # Correct | % Correct | Mean Time |
|---|---|---|---|---|---|---|---|
| Focused | Single Digit | Combined | Yes | 30 | | | |
| Focused | Single Letter | Combined | Yes | 30 | | | |
| Focused | 3 Digits | Combined | Yes | 30 | | | |
| Focused | 3 Letters | Combined | Yes | 30 | | | |
| Selective | Single Digit | Combined | Yes | 30 | | | |
| Selective | Single Letter | Combined | Yes | 30 | | | |
| Selective | 3 Digits | Combined | Yes | 30 | | | |
| Selective | 3 Letters | Combined | Yes | 30 | | | |

1. What type of attention was your highest score? _____
2. What type of attention was your lowest score? _____
3. Focused attention works on attention span. What did you learn about your attention span? _____
4. Selective attention works on distraction. What did you learn about your reaction to distraction? _____

*Hierarchical Attention Training Software is a product of Parrot Software.
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# Hierarchical Attention Training*
# Score Sheet for
# Alternating Attention

Name: _____ Date: _____

| Attention Type | Stimulus Type | Cue Type | Memory Required | Total Tried | Correct | /0 Correct | Mean Time |
|---|---|---|---|---|---|---|---|
| Alternating | odd/even | Combined | No | 50 | | | |
| Alternating | odd/even | Combined | Yes | 50 | | | |
| Alternating | Number Comparison | Combined | No | 50 | | | |
| Alternating | Number Comparison | Combined | Yes | 50 | | | |
| Alternating** | Before & after M | Combined | No | 50 | | | |
| Alternating** | Before & after M | Combined | Yes | 50 | | | |
| Alternating | Letter Sequence | Combined | No | 50 | | | |
| Alternating | Letter Sequence | Combined | Yes | 50 | | | |

** Increase "Wait" time until you can master the task. What "Wait" setting worked for you? _____

1. Alternating attention works on switching tasks. Was this easy medium hard for you? (circle one)
2. What did you learn about what happens when someone interrupts you? _____

_____

*Hierarchical **Attention Training Software is a product of Parrot Software.**
**attalscr.doc**

# Hierarchical Attention Training*
# Score Sheet for
# Divided Attention

**Name:** _____ **Date:** _____

| Attention Type | Stimulus Type | Cue Type | Memory Required | Total: Tried | # Correct | % Correct | Mean Time |
|---|---|---|---|---|---|---|---|
| Divided | odd/even | Combined | No | 50 | | | |
| Divided | odd/even | Combined | Yes | 50 | | | |
| Divided | Number Comparison | Combined | No | 50 | | | |
| Divided | Number Comparison | Combined | Yes | 50 | | | |
| Divided | Before & after M | Combined | No | 50 | | | |
| Divided** | Before & after M | Combined | Yes | 50 | | | |
| Divided | Letter Sequence | Combined | No | 50 | | | |
| Divided | Letter Sequence | Combined | Yes | 50 | | | |

1. Divided attention works on doing more than one thing at a time.

   Was this easy medium hard for you? (circle one)

2. When your mind is overloaded, what can you do to reduce the number of errors you make? _____

   _____

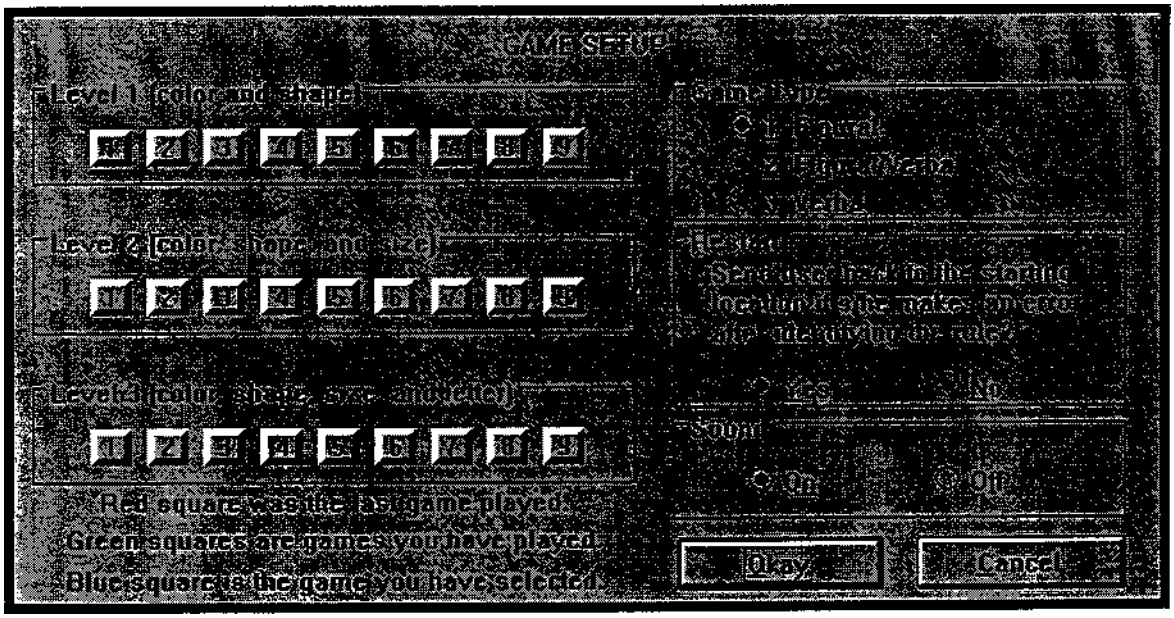
*Hierarchical Attention Training Software is a product of Parrot Software.

attdvscr.doc

# How to Use
# What's My Logic?*

1. Boot the computer.
2. Start Windows.
3. Double click on the icon for **Becky's Classes**
4. Click on the icon for **What's My Logic?**
5. Click on the **Play Game** button.

The following Dialog Box will appear. Select the items assigned by your teacher.


GAME SETUP
Level 1 (color and shape)
Level 2 (color, shape, and size)
Level 3 (color, shape, size, and letter)
Red squares are the last game played.
Green squares are games you have played.
Blue squares is the game you have selected.
Okay
Cancel

6. Click on the Okay button.
7. When the **game screen** comes up, start in the lower left corner and move from one square to the next to find a path to the GOAL square in the upper right corner. You may move by clicking on the square with the mouse or by using the arrow keys. If you go to a square that does not fit the rule, the computer will put you back where you were.
8. When you have reached the goal, you will be asked "Can you identify the rule used in this game"? Click on either the Yes or **No** button.
9. Click on the box at the bottom of the screen that contains the correct rule.
10. Click on the white boxes to complete the rule.
11. Click on OK.
12. Be sure to copy your scores onto the score sheet.

*What's My Logic? is a product of Critical Thinking Press and Software.

# What's My Logic?*
# Score Sheet

Name: _____

| Date | Level | Game | # Correct | # Incorrect | Rule Guesses | Score |
|---|---|---|---|---|---|---|
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*What's My Logic? is a product of Critical Thinking Press and Software.
wmlscr.doc

# Get Me Out of Here!*
# Game I -- Nautilus Bay

Mission:

You are on your way to a soccer tournament outside the Nautilus Bay city limits—but you need to get something for the school principal before leaving Nautilus Bay.

Start and Exit Locations:

Start at the intersection of Sunset Avenue and Fairground Way.
Exit by the east end of Lower Bay Drive. (The Nautilus Bay exit is not marked on the map but is listed under the "Places" menu.)

Date/Time/Weather:

Date: March 7, 1998
Time: 12:23 p.m.
Weather: Sunny and windy

Travel Time:

The correct escape route will have you out of Nautilus Bay by 3:23 p.m. March 7, 1998.

Tasks:

- Drop off the weather report at the School.
- Pick up today's weather report at the Nautilus Bay Weather Station.

One-way Streets:

- Shell Dr. runs southbound.
- Town Square South runs southbound.
- Town Square East runs eastbound.
- Town Square North runs northbound.
- Waters Ave. runs eastbound.

Road Hazards:

Road advisories posted within the last 24 hours:

- 11:00 a.m.: A small-craft warning has been issued for boaters on the bay. This means that winds are strong, especially near the water.
- 12:02 p.m.: A truck full of seaweed overturned at the intersection of Main St. and Chamber St. The intersection will be closed for 4 hours to clean up the slippery mess.

Additional Information:

- Before exiting town you must go through
  a street which describes the color of water,
  a street which describes an event that occurred at 6:27 a.m., and
  a street which describes the sections of the nautilus.

- Nautilus Bay Weather Station is located on Chamber St. between the Waters Ave. / Chamber St. and the Windy Point Dr. / Chamber St. intersections.
- Nautilus Bay Weather Station reports:
  Sunny and windy today
  High 78° Low 62°
  Winds from the west at 20 mph
  Sunrise-6:27 a.m.
  Sunset-7:41 p.m.
- The school is located south of the weather station.

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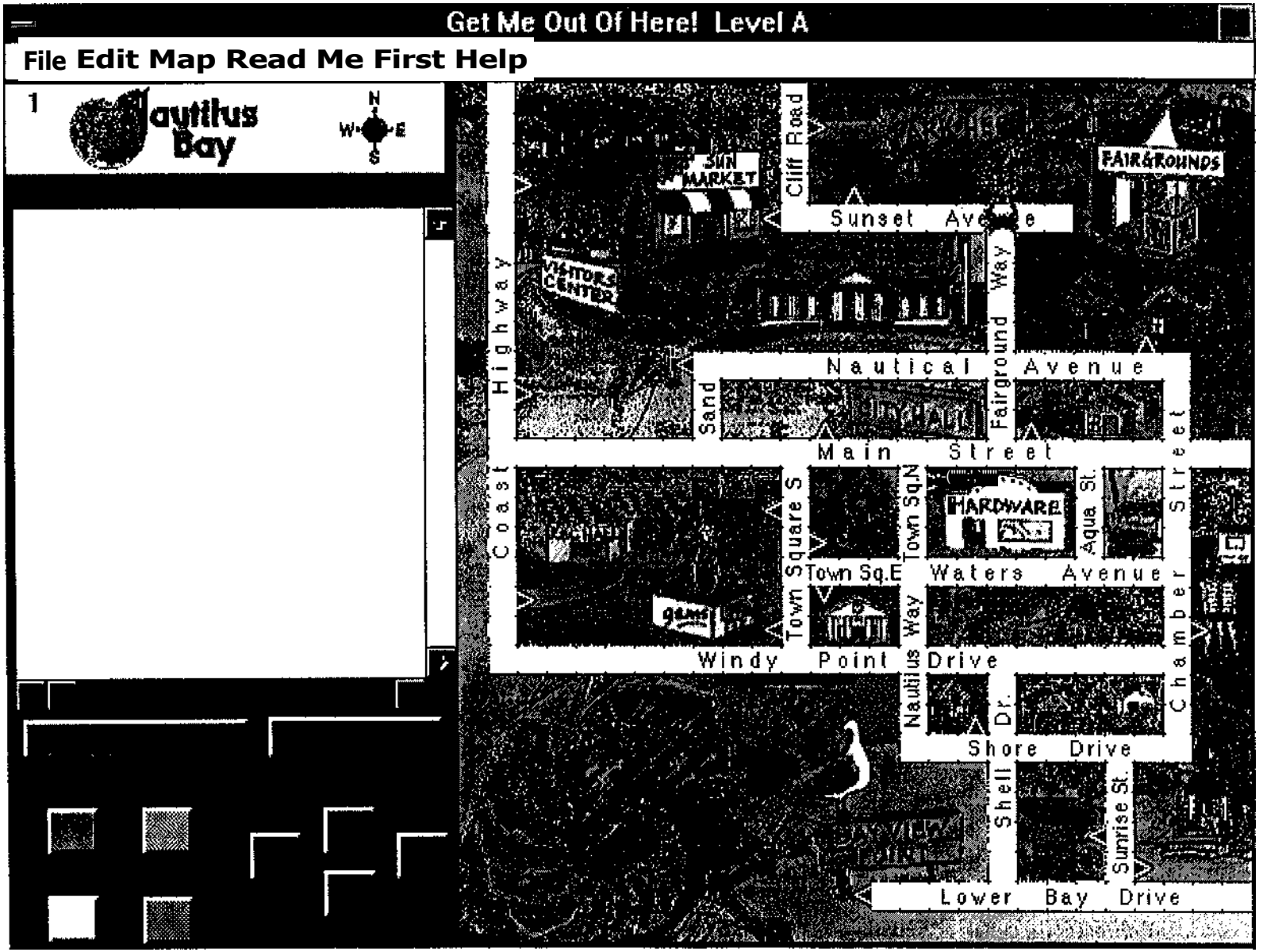


'Get Me Out of Here is a product of Critical Thinking Press and Software
nautl map.doc

# Get Me Out of Here!*
# Game 3 -- Pigville

Mission:

Your Aunt Bell is an archaeologist by hobby. She just called your home and informed your family that she has dug up some bones that need to be identified immediately. She wants you to rush her to the museum in the nearby town of Deadfish. Your parents seem unimpressed with your aunt's claim and insist you pick up some feed corn before you leave town. Find the shortest route out of town.

Start and Exit Locations:

Start at the west end of Little Pig Rd.
Exit by the east end of Big Pig Rd. (The Pigville exit is not marked on the map but is listed under the "Places" menu.)

Date/Time/Weather

Date: April 11, 1999
Time: 3:20 p.m.
Weather: Cloudy

Travel Time:

The correct escape route will have you out of Pigville by 4:19 p.m. April 11, 1999.

Tasks:

- Pick up some feed corn.
- Pick up your Aunt Bell at City Dump #3.

One-way Streets:

- Smelly Rd. runs northbound.
- Smelly Dr. runs southbound.
- Big Pig St. runs eastbound.
- Stink Rd. runs southbound.
- Danger Rd. runs southbound between Rank St. and Little Pig Rd.

Road Hazards:

Road advisories posted within the last 24 hours:

- 3:12 p.m.: Two tractors collided at the intersection of Little Pig Rd. and Smelly Drive. The trucks have closed the intersection to all but eastbound and southbound traffic.
- 3:10 p.m.: An eastbound pickup truck on Big Pig Rd. overturned just west of the Stink St. intersection. The road will be closed at this location for 2 hours and 45 minutes.
- 1:19 p.m.: A car and fire truck collided at the intersection of Little Pig Rd. and Mud St. The intersection will be closed for 2 hours.

Additional Information:

None.

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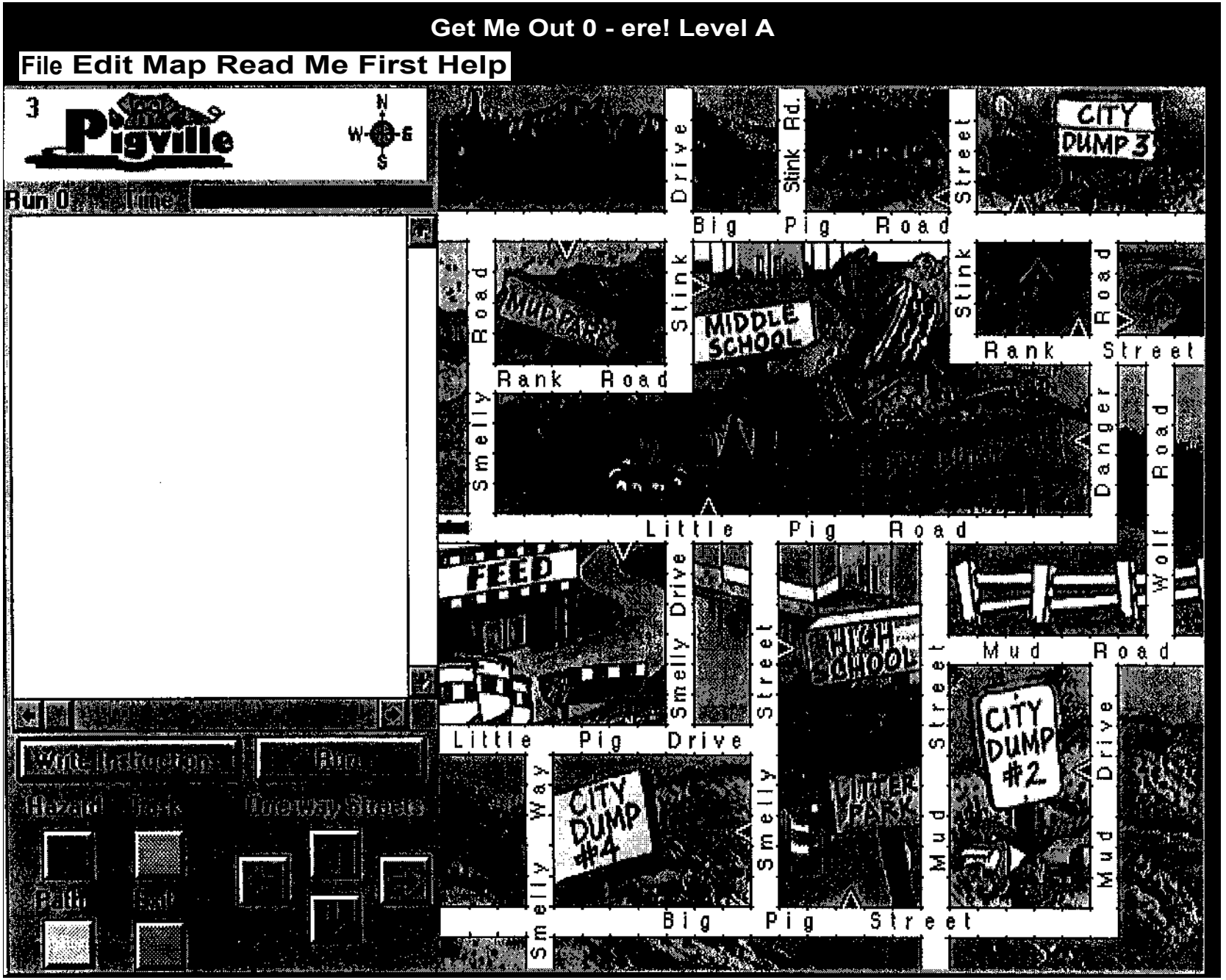


*Get Me Out of Here is a product of Critical Thinking Press and Software
pig3map.doc

# Get Me Out of Here
# Score Sheet*

Name: _____ Date: _____

| Game # | Game Name | #•Runs Needed | Comments |
|---|---|---|---|
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*Get Me Put of Here is a product of Critical Thinking Books and Software.
gmoohscr.doc

# Book Excerpt

This chapter is taken from a manual published by the Chancellor's Office in 1987. Assembled by **The Consortium for the Study of Programs for the Brain Injured in the California Community Colleges, The ABI Handbook: Serving Students with Acquired Brain Injury in Higher Education is an** excellent source of information.

This book has not been reprinted, so look for it. It may still be present on your campus.

Chapter Four

# Program Profiles

One of the features of the ABI Handbook is its capacity to assist educators in assessing existing resources and developing new ones to meet the needs of the students with Acquired Brain Injury. Presently over 2500 students with ABI receive varying degrees of services and instruction from California Community Colleges. While a few colleges have programs specifically designed to serve this population, the great majority have not as yet developed such specialized programs. With staff training and some program modifications, existing programs for students with disabilities could offer educational opportunities for students with ABI.

It is the intent of this chapter to provide examples of the range of program possibilities through the presentations of five program profiles. These program profiles are:

- **limited services**
- **learning disabilities**
- self-contained — off-**campus**
- **full spectrum**
- **full spectrum and self-contained off-campus.**

A comprehensive Program Checklist is provided to guide the educator in assessing current program capability to meet specific student needs as well as to suggest areas for future program development. As each setting is unique, the characteristics of the population to be served, the nature and extent of current and potential resources, and the level of local support must each be considered when developing a program.

## *Limited Services*

In the town of Los Arboles, California, Mountain Top College offers only limited services for students with disabilities. MTC provides enabling services including student notetakers,

adaptive physical education, test facilitators for those who have trouble writing, and interpreters for the deaf. MTC does not offer academic or tutorial services for students with learning disabilities.

This program is characterized by the following components:

- **enabling services**
- **adaptive physical education, but no other special classes**
- **all coursework is through participation in mainstream classes.**

MTC currently serves 15 students with ABI through their adaptive PE program. Of this group, a mall percentage is taking mainstream classes with assistance from enabling services. However, most of their ABI students are taking only adaptive PE courses on campus while receiving additional services through Los Arboles Medical Center's outpatient rehabilitation department.

## *Learning Disabilities Program*

Townpark College is located within a rapidly growing suburban community in Southern California. It has expanded its services to students with learning disabilities over the past eight years. These services include:

- **in-depth assessment**
- **tutorial services**
- **specialized classes**
- **guidance and counseling**
- **enabling services**
- **adaptive physical education.**

The program staff has established good rapport with the mainstream faculty. Their program's success has been exemplified by the large number of learning disabled students completing mainstream coursework.

Within the past year and a half, the program has been greatly affected by an acceleration in growth of entering ABI students. As yet, they have not developed any specialized services for this population. Rather, they have attempted to integrate them into their existing resources.

In an effort to meet the needs of this rapidly growing population, the Administration has committed funding and staff time for participation in ABI training workshops and conferences and visitation to nearby colleges with ABI services. Additionally, invitations have been extended to a variety of rehabilitation professionals at the local medical center to inservice staff.

Desert Rose is located in Eastern California. It has an off-campus facility devoted entirely to ABI students. It emphasizes serving post-stroke older adults.

Desert Rose can accommodate students with severe communication, spatial orientation, memory and mobility problems. This college's program meets the demands vf4he.local community offering these unique services to assist students in making .the transition back to community living.

Programs like those at Desert Rose usually have the following components:

- **intensive speech/language services**
- **intensive cognitive training**
- a self-contained setting where mobility and special needs can be effectively **addressed**
- **adaptive physical education**
- **skills training in community transition.**

Oakwood is a large suburban college about an hour's drive from a major metropolitan area in California. Their Disabled Students Program includes enabling services, speech/language services, special basic skills instruction, as well as special classes for students with ABI.

At Oakwood, there is a special class in communication and social adjustment for ABI students. The disabled students staff has been thoroughly trained and is well-aware of their students' special needs. There are also paraprofessionals available for one-to-one tutoring to reinforce the materials taught in special classes and to support students taking mainstream classes. They have recently opened a computer lab for Computer-Assisted Instruction (CAI) and adapted computer technology for students with disabilities.

A full-spectrum service program, like Oakwood's, usually contains the following components:

- **enabling services**
- **tutoring**
- **CAI/adapted computer technology**
- adaptive physical education
- special classes for disabled students
- mainstream classes with support
- vocational preparation and job placement
- **speech/language services**
- **counseling/guidance.**

## *The Combination: Full Spectrum and Self-Contained Off-Campus Program*

Metropolitan College offers comprehensive services and instruction for students with ABI. It has two programs: one on-campus and one satellite. The off-campus center is a unique program offering specific classes and services to meet the cognitive, psychosocial, and vocational needs of ABI students.

A program like the off-campus center offers the following:

- psychosocial **development**
- **cognitive training**
- vocational preparation and job placement

- **skills training in community transition**

- **CAVadapted computer technology.**

The on-campus program provides similar services to those at Oakwood. When a student is ready for transition from the satellite program to special classes on the main campus, he or she may enroll in a series of courses similar to those offered by Oakwood.

On Form 1 the Program Check List (page -44-46) is provided. It is recommended that each campus identify the kinds of programs and support services available to students with ABI.

By completion of the Program Check List the specialist should be able to assess the campus capabilities and local resources available for serving this population. Judgments can then be made (based upon the Student Profile charts described in Chapter Five) as to what types of resources are available within the constraints of the campus services and what resources need to be accessed from outside agencies. In order to develop a full listing of resources within your college it is„recommended .that .campuses. consider a community advisory group for disabled students.

# *Program Checklist*

Academic Counseling (Specialized)

Access of Student to Extracurricular Activities

Adapted Library Materials and Resources

Adapted Parking

Adaptive PE

Audio/Visual Equipment and Resources

Available Funding/Staff Time for Training

CAI/Adapted Computer Technology

Campus Accessibility Maps

Campus Orientation

Cognitive Training

Counseling/Guidance

____ Enabling Services

Facilities/Equipment Modification

Housing Assistance (Locator)

Individual Assessment (ABI)

Individual Assessment (General)

Individual Assessment (LD)

Individual Assessment (Speech/Language/Hearing)

Interpreter (Manual)

Interpreter (Oral)

Job Development

Liason with Referral to Campus Agency

Liason with Referral to Community Agencies

Mainstream Classes with Support

Mobility Training

Note Taker Services

One-to-One Instruction

Paraprofessional Tutoring

Peer Counseling

Personal Counseling

Pre-Vocational Training

Reader Services

Registration Assistance

Self-Contained Program

Small Group Specialized Instruction

____ Special Classes for ABI Students

Speech/Language Services

Test Taking Facilitation

Transcription Services (Braille)

Transcription Services ( Non-Braille)

Transportation Assistance — Off-Campus

Tutoring

Vocational Counseling

Vocational Preparation

Vocational Testing

Wheelchair or Adapted Devices (Loan)

Wheelchair or Adapted Devices (Repair)

## Chapter Five

# Student Profiles

Four points need to be emphasized about students with ABI:

• They have combinations of disabilities in three areas: (a) cognitive/ perceptual/ communicative, (b) psychosocial/behavorial, (c) motoric/sensorial/physical. All three areas are interactive.

• The severity of each of these disabilities may range from **mild to severe.** For instance, someone may have severe psychosocial problems, a mild cognitive problem and a moderate motor disability. The variability, range, and interaction of these disabilities are illustrated in the case studies which follow.

• To maximize the potential for success, there needs to be an appropriate match between the needs of the student and the resources available.

• The potential for progress that students with ABI may experience depends on their present levels of performance and motivation, premorbid factors, and severity and type of injury.

The Student Profile Chart (see Figure 8, page 65) and Program Checklist provide an educational framework for understanding the complexities of serving students with ABI. The Student Profile Chart is designed to allow for plotting the range of ability, from mild to severe, in each of seven functional areas. Space is provided to list appropriate college and community resources.

The Program Checklist, described in Chapter Four, is a comprehensive list of program options and is provided to help match the needs of the student with ABI to the program. It may also be helpful in determining the need for referrals to other programs.

The Student Profile Chart is represented by a matrix in which columns correspond to functional areas: (1) cognitive; (2) communication; (3) psychosocial; (4) academic; (5) psychomotor;

(6) vocational, and (7) independent living. The rows are numbered one through nine, and represent a scale for rating students. A rating of one indicates the mildest impairment, nine the most severe. College and community resources and services are identified on the two rows at the bottom of the chart.

## Placement Lists

The Placement Lists found on pages 58-64 provide a series of statements describing levels of functioning relative to program placement. Placement on each list is based upon the results of the interview, screening assessment and in-depth assessment. The levels are then transferred to the Student Profile Chart.

## Case Studies

The following four case studies are presented to illustrate the use of the seven Placement Lists and the Student Profile Chart. Included in each case study are completed Student Profile Charts with rationales for program placement.

## *Case History #1*

arty was 22 years old, had a history of learning _____ disabilities and dropped out of high school in the 10th grade. He was interested in the outdoors and had worked for the last three years as an auto mechanic. He was injured when his motorcycle went off a rain-slick road.

Marty was in a coma for four months and had an extended period of recovery. Formerly right handed, he suffered hemiplegia, paralysis of the right side of his body. His injury resulted in cognitive deficits, language impairments and spatial-orientation problems. He had lost the ability to read, write and do math at a functional level. He hated himself after the accident and no longer thought himself attractive or interesting. He withdrew from people. He exhibited some problems with frustration tolerance and had periods of depression. Despite these problems, his family remained quite supportive.

When he came to the Metropolitan College satellite program about a year after his accident, he was using a quadcane, had dysarthria (his speech was slow and slurred), and exhibited word-

finding problems. Marty's learning disabilities were exacerbated by his injuries, and he was not capable of taking mainstream classes. He was frustrated in having lost what reading and math skills he had. Learning to write with his left hand became necessary, and it was evident that he could no longer work as a mechanic.

Initially, he was enrolled in a number of special classes at the satellite program and adapted physical education at the main campus. In addition, he continued his out-patient individualized speech-language therapy at the local rehabilitation center.

Upon completion of his evaluation, his profile looked like this:

***Student Profile Chart***

**&Wont Nwns** Marty _____ note

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| Piesouree Seth:eon | | | | | | | |
| College | Seeded dames | | Spuds! Moms | Special demo | APE | | |
| Community | | bstlet-fhal therapy | | | | | |

The program staff at Metropolitan College worked with Marty over several semesters with a combination of satellite program and main campus services. Gradually his skills increased. The first semester, for instance, Marty successfully progressed through the cognitive training curriculum at the satellite program. At the same time, he made sufficient progress in his special academic classes so that he could take a mainstream first-aid class the following semester. The class textbook was taped and tutorial assistance was provided. Individualized speech and language therapy was terminated and he was transferred into a special communication class on campus. Mobility rapidly improved. All of these gains contributed to a decrease in his depression, and an increase in self-esteem and frustration tolerance.

Upon re-evaluation, his profile chart revealed significant progress.

***Student Profile Chart***

Student Nardi* Marty Da.

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|---|---|---|---|---|---|---|---|
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| Canniunny | | | | | | | Sad& vervice: ride |

## *Case History #2*

Christine suffered a mild stroke in the right frontal temporal region at age 38. She had been supporting herself and her three children as an R.N. She was recognized as a dynamic and competent professional and managed her role as working mother smoothly.

After her hospitalization she appeared to have no apparent physical impairments but complained of generalized left-sided weakness. She returned to work but her level of organization and follow-through was disrupted. In addition, she was unable to adequately manage her household. Her behavior was recognized by friends and family as being more childlike and at times inappropriate. Her academic skills remained intact but she complained of reading comprehension problems.

Christine realized, even before she came to Townpark, that she had cognitive problems. As a single parent she attempted to solve a lot of problems herself. She developed . some of her own compensatory techniques. For example, she maintained a detailed calendar of all her children's activities. Each morning she would list all of the important activities she would need to do that day.

Although she was able to compensate reasonably well, the pressure of caring for her family and herself caused emotional stress and anxiety. She began to worry about losing her job. A social worker friend at the hospital counseled her to take a medical leave of absence and go back to school to brush up on her skills.

She made an appointment with a counselor at Townpark who interviewed her and referred her to the Disabled Student's Center. An evaluation by the Learning Disabilities Specialist revealed mild cognitive impairments. She was advised to enroll in a special study class, a peer support group sponsored by the Re-Entry Program, a weight lifting class, and a developmental reading class. In addition, to help her with her children's needs, she registered for a class in developmental psychology.

The Learning Disability Specialist developed the following profile:

*Student Profile Chart*

Student bona Christine

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| Communtry | | | | | | | |

After two semesters Christine was referred to the Department of Rehabilitation. With the assistance of a rehabilitation counselor she returned to a similar nursing position. She had developed a better understanding of her family and friends, and was better able to respond to problems.

MEM

## *Case History #3*

David was 24 years old when he survived a head-on collision in his truck. Up until that time he had been a healthy young man living with his girlfriend and working full-time. He had an above average educational background, completing

his high school and two years of community college courses easily.

As a result of this accident and his acquired brain injury, he could not walk and could not speak. He had tried to communicate with a Speak and Spell but found it frustrating. He was able to make some use of a letterboard. His girlfriend, unable to understand or cope with his disabilities, had left him and he had returned to his parents' home.

David was extremely frustrated and upset most of the time, and would have violent outbursts of anger followed by periods of acute depression. His parents found it increasingly difficult to deal with his behavior and felt that the best thing for him would be to get him into a normal setting where he could interact with others, do adaptive physical activities and learn how to use some kind of communication device.

David was brought to Oakwood for evaluation. His behavior problems made it very difficult to conduct meaningful testing. Yet there were moments when he was calm, and it was evident that he could read and understand basic material. He showed potential for growth in academics, cognition -and psychomotor areas, but his behavior could not be-controlled.

When assessment was ultimately completed, the examiner rated him at 3 in the cognitive area. He exhibited functional reading and math abilities, and he earned a rating of 4 in academics.

The tragedy of David's situation was that if Oakwood's program did not accept him, there was no other suitable program available in the community. His medical benefits had been exhausted and his family had no further resources, having mortgaged their home to help cover his expenses. There was no money to send him to a residential program, even if one could be found that would take him.

The specialists at Oakwood decided to accept David on a limited, trial basis to attend an adaptive physical education class and a communication class for students with ABI. His behavior proved to be too disruptive for him to be allowed to continue in group classes, and after a time it was determined that even one-to-one work was not productive. The family was referred to the Department of Social Services for an out-of-home placement.

On the Student Profile Chart, David was rated in the following way:

***Student Profile Chart***

**Studer! karts** David Dot.

| Placement Level | Cognitive | Camenter bales | losseho. eeemi | AsaWMe | Psyco. | Vaelermi | Wiper. lent Lams |
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| College | | Special speech | | | APE | | |
| Community | | belepen- gent therapy | iodises- dent literopy | | | | |

The decision to discontinue services was hard to make. David presented a difficult case. However, the utilization of the Student Profile Chart helped make the rationale for the decision clear to everyone.

## *Case History #4*

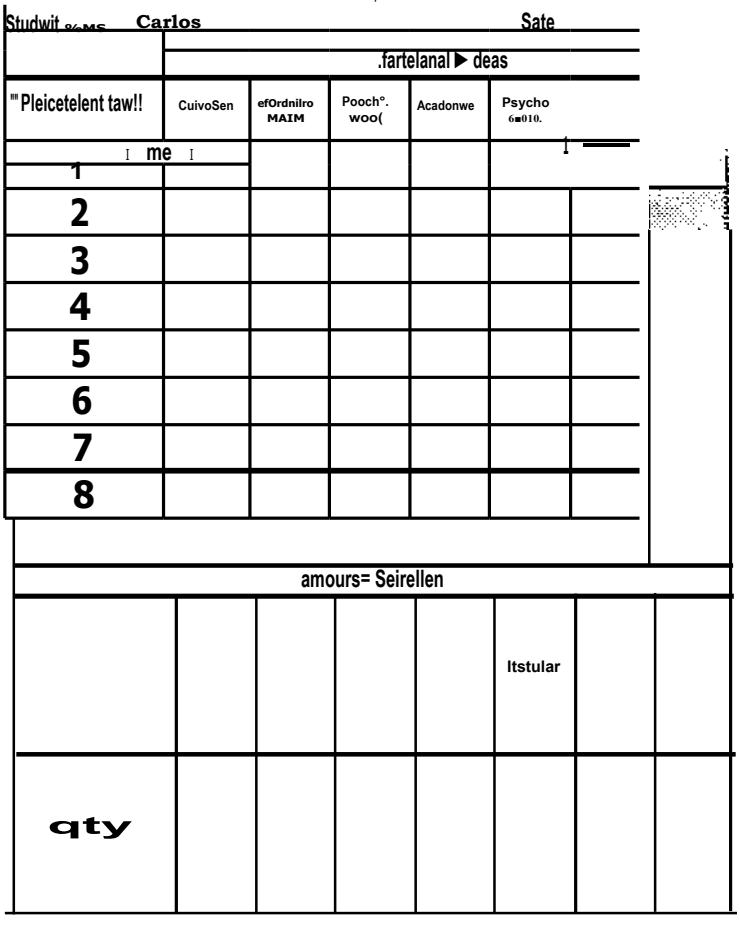
Carlos was a bright student who had taken advanced _____ courses at the local high school. However, even before the automobile accident that left him in a coma for days, he

was strong-willed and rebellious. When he had recovered sufficiently to return to high school, he was academically competent, but cognitively distractable. He had a mild eye-hand coordination problem and dysarthria. He was aware that he had brain stem damage but didn't understand the neurological implications. He would become defensive, act out and then be remorseful. This behavior led to occasional altercations with the police. A social worker suggested enrollment in the local community college.

Carlos applied at Mountain Top Community College but was referred to the full-service program at Metropolitan College.

This is his initial profile:

*Student Pro**ile Chart***



As you can see, his academic rating indicated he could be successful in mainstream classes, cognitively he was rated 4, and received a 3 in communication due to his dysarthria. Through observation during the interview and testing situations he was rated 4 in psychosocial skills. After the program specialist identified the degrees of the impairments, Carlos made it clear that he did not want to be around disabled people, and objected to the recommended special classes. He was put into a mainstream physical education class and some special classes as a compromise. He had flare-ups with classmates that got him into trouble. One day another student said to him, "What you need is a good kick in the pants to get this work done." Carlos reacted impulsively to this remark and pushed him.

The specialist recommended that Carlos receive counseling, reduce his workload, and take the special class for students with ABI in communication and social adjustment offered at the satellite center. He was also referred to a neuropsychologist for an in-depth work-up and to a psychiatrist for medication to control his behavior.

Carlos could grasp the material in his mainstream class. but he could not learn as fast as he did before his injury due to his distractability. The workload reduction and tutoring accommodated his learning needs, but he continued to be frustrated by his disability. Carlos refused to take the medication that had been prescribed. He continued to be resistant and his peer relationships were strained. He occasionally lost control in his mainstream class. When the instructor could no longer tolerate Carlos' volatile behavior, he was barred from the class. After the full extent of his problems became evident, a re-evaluation resulted in a rating of 9 on the Psychosocial Placement List. Carlos' behavior and lack of cooperation resulted in his eventual suspension from the college. His revised Student Profile Chart looked like this:

### *Student Profile Chart*

Student Mane Carlos _____ Doe _____

| Placement Level | Cognition | Camarn tae, | Perris solid | Amax& | Pupas wet | VisoOwl | Niwilepen· solM Wing |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| Resource Selection | | | | | | | |
| CeSep | | | | | | | |
| Community | | | | | | | |

After one year Carlos applied for readmission to Metropolitan College. He claimed that he was beginning to understand that his problems at the college stemmed from behavioral difficulties, and he was ready to work on them. This time the specialist developed a program that focused on the psychosocial problems that included a strict behavioral contract, and accepted Carlos on probation.

Carlos was asked to take a limited number of units: -He was restricted to special classes. The ABI communication class was mandatory. He utilized tutoring services and the adaptive physical education class to reduce stress. Given this program, Carlos was able to succeed, and ultimately he enrolled in a combination of mainstream and special classes.

Placement Lists in each of the seven functional areas are provided.

**Placement Lists**

# *The Cognitive Placement List*

1. Is able to take mainstream classes. May need academic counseling and/or registration assistance.

2. Is able to take mainstream classes, with consideration to number of classes and content areas.

3. May need a study skills/learning strategies class and monitoring. Orientation training may be needed to acquaint student with the campus.

4. May need cognitive retraining, i.e. concentration, reasoning, problem solving, orientation with the development of specific compensatory techniques for memory deficits in conjunction with mainstream special classes.

5. Requires cognitive retraining. Deficits restrict enrollment to specialized classes.

6. Benefits from cognitive retraining classes and special classes with consideration to the number of classes and content areas.

7. Requires cognitive retraining classes in a one-to-one or small group setting.

_____8. Limited benefit from community college activities.

9. Severity of involvement precludes benefit from attendance in a community college setting.

# *The Communication Placement List*

1. Speech/language/communication is adequate for participation in mainstream classes.

_____2. Is able to take mainstream classes with consideration to content areas.

3. Is able to take mainstream classes with supplemental speech/ language/ communication services/or classes.

_____4. Is able to participate in selected mainstream classes and requires simultaneous speech/language/communication services/class in motor speech, receptive language, expressive language, and pragmatic communication.

_____5. Requires special speech/language/communication classes in addition to other special classes.

6. Benefits from speech/language/communication classes with consideration to complexity of content and instruction.

_____7. Benefits from small group instruction and tutoring in speech/language/ communication.

_____8. Limited benefit from community college activities.

9. Severity of involvement precludes benefit from attendance in community college setting.

# *The Psychosocial Placement List*

1. Psychosocial skills are adequate for participation in mainstream classes.

2. Is able to take mainstream classes but requires periodic counseling to monitor and modify behavior.

3. Is able to participate in mainstream classes with ongoing counseling and assistance in monitoring behavior.

_____4. Participates in selected mainstream and/or special classes. Requires ongoing counseling and structured intervention.

_____5. Participation is limited to special classes with ongoing counseling.

_____6. Benefits from special classes with one-to-one class assistance.

7. Is able to benefit only from a structured class addressing specific psychosocial issues or one-to-one instruction.

8. Limited benefit from community college activities.

_____9. Severity of involvement precludes benefit from attendance in a community college setting.

# *The Academic Placement List*

1. Academic skills are adequate to take mainstream classes without assistance. May need academic counseling and/or registration assistance.

2. Is able to take mainstream classes with supportive services.

3. Is able to take mainstream classes with supportive services, the assistance of a tutor and/or a study skills/learning strategies class.

4. Is able to participate in some selected mainstream classes but requires special classes in basic academic skills such as reading, spelling, math, or writing.

5. Participation is restricted to special academic classes.

6. Benefits from special academic classes with assistance of a tutor.

7. Benefits from one-to-one tutoring.

_____8. Limited benefit from community college activities.

9. Severity of involvement precludes benefit from attendance in a community college setting.

# *The Psychomotor Placement List*

_____1. Psychomotor skills are adequate to participate in mainstream classes. May need academic counseling and/or registration assistance.

2. May have mild limitations in psychomotor domain, but functions independently. May require minimal support.

3. Is capable of satisfactorily meeting the criterion of a mainstream class with adaptation and/or assistance.

4. Benefits from participation in psychomotor training which may include adaptive physical education, and/or sensory motor re-education with compensatory techniques for participation in mainstream and/or special classes.

_____5. Requires supervision and assistance to benefit from adaptive physical education and sensory motor classes.

6. Requires one-to-one assistance to benefit from specialized psychomotor classes.

7. Requires a specialized approach to relearning psychomotor skills in a one-to-one setting.

_____8. Limited benefit from community college activities.

9. Severity of involvement precludes benefit from attendance in community college setting.

# *The Vocational Placement List*

1. Is able to develop own career interests and pursue a vocational goal in competitive employment. May benefit from vocational counseling.

2 Is able to develop own career goals with the help of interest and/or aptitude testing and pursue a vocational goal with minimal counseling and support.

3. Identification of vocational goals is difficult and/or unrealistic. May benefit from participation in mainstream career development classes and support.

4. Is unable to identify a vocational goal. Requires specific vocational services including: job training, placement and follow-up assistance for successful placement in competitive paid employment.

5. Benefits from structured vocational program and prevocational training, and with extensive training supervision, and selective placement, competitive employment may be possible in the future.

6. Unable to work in competitive employment and requires long-term training and volunteer placement in a selected site with extensive follow-up services.

7. May be successful in a structured, volunteer setting a few hours a week. Site must be adapted to meet the needs of the student. Will require long-term follow-up.

8. Limited benefit from community college activities.

9. Severity of involvement precludes benefit from attendance in a community college setting.

# *The Independent Living Placement List*

1. Is able to function independently.

2 Is able to live independently and access appropriate support services.

_____3. Is able to live independently but needs adaptive living guidance.

4 Is able to participate in selective mainstream or special classes but requires independent living skills counseling/instruction.

5. Participation is limited to specific classes including learning skills instruction.

6 Benefits from special classes in independent living with one-to-one support.

_____7. Benefits from one-to-one support in independent living skills.

_____8. Limited benefit from community college activities.

9. Severity of involvement precludes benefit from attendance in a community college setting.

# *Student Profile Chart*

**Student Name** _____ **Date** _____

| | | ional A | | | | | |
|---|---|---|---|---|---|---|---|
| **Placement Level** | **Cognition** | **Commun-ication** | **Psycho-social** | **Academic** | **Psycho-motor** | **Vocational** | **Indepen-dent Living** |
| 1 **Mild** | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 **Severe** | | | | | | | |
| **Resource Selection** | | | | | | | |
| **College** | | | | | | | |
| **Community** | | | | | | | |

*Figure 8 — Form 1, Student Profile Chart*

Chapter Six

# Screening and Entrance Process

The best way to explain the screening and entrance process for students with acquired brain injuries is to graphically illustrate how a student might move through the entire process. A flow chart has been created for this purpose (see Figure 9, page 68).

The flow chart outlines a student's involvement within the program from referral to exit. Highlighted on Figure 9 is the screening and entrance process. In the subsequent chapters on In-Depth Assessment and IEP Process, the remainder of the flow chart will be discussed.

The shapes within the flow chart designate specific functions. The ovals designate movement of individuals in and out of the program process. The rectangles designate a staffing process. The diamonds designate decision-making points in the program process.

Referrals are accepted by telephone and in person from, but not limited to, the following:

Referr

- **the prospective student**
- **family members**
- physicians
- rehabilitation centers
- **psychologists/neuropsychologists**
- **Department of Rehabilitation**
- **allied health professionals**

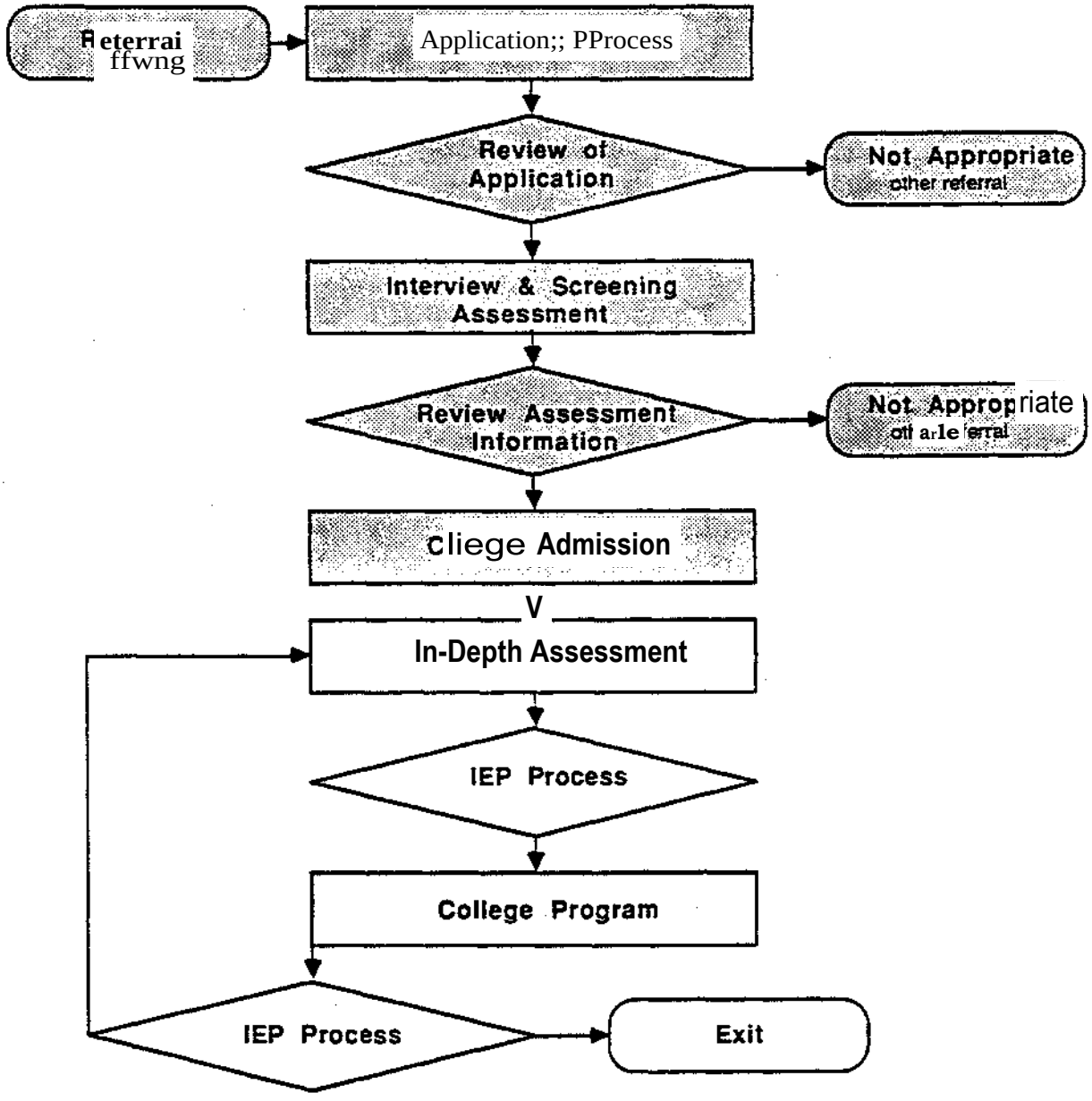



*Figure 9 — Screening and Entrance Highlighted*

- **community college personnel**
- **other educational sources.**

The ABI Tracking Sheet (see page 74) is a suggested form to assist the staff in monitoring the screening process of entering brain injured students in Disabled Student Programs and Services.

**ABI Tracking Sheet**

It is recommended that a complete packet of information, applications, and forms be sent to the prospective student through the mail.

This packet should include the following:

- **cover letter**
- **program description/brochures**
- entrance guidelines
- college **application**
- **DSP&S** program application
- release of **information form(s)**
- **return envelope with mailing label.**

Suggested formats are found under Forms in the Resource Section.

After receiving the completed application, medical and rehabilitation records, a professional team reviews them to determine if the applicant meets the General Entrance Criteria and has a medically verifiable acquired brain injury. Those applicants who meet these criteria are scheduled for interviews and screening assessments. Others are referred to more appropriate resources.

## Screening Assessment

The following forms are provided to assist with the screening and assessment process:

- **ABI Applicant Tracking Sheet**
- Interview Worksheet
- Pre-Screening Packet Check List
- Sample Cover **Letter**
- **Entrance Guidelines**
- **Screening Process Check List**
- **Screening Assessment**
- **Examiner's Impressions.**

In the personal interview with the applicant, it is necessary to develop an awareness of that person's ability to exhibit appropriate adaptive behavioral patterns compatible with being a student at a community college. In addition, it is important to determine if the resources available within the program are sufficient to meet the applicant's needs.

It is felt that there are three critical areas which merit close observation and evaluation. These critical areas are:

**1. Cognition**

- Is the person generally oriented to person, place and time?
- Is the person able to attend to a task for a reasonable length of time?
- Is the person capable of retaining information to produce new learning?

**2. Communication**

- Is the person able to comprehend spoken or written language?

3. **Psychosocial**

• Is the person capable of maintaining social behavior appropriate to a college setting?

If it is determined that the applicant is not able to meet these basic requirements, then he or she should be referred to other, more appropriate agencies in the community. If the person meets these basic critical requirements, then he or she can proceed with the remaining admission requirements.

**Interview Worksheet**

The personal interview is a procedure to gain first-hand knowledge of the applicant's functional status. In addition, it provides for the applicant the opportunity to inquire about the program and to verbalize their initial goals and objectives.

The Interview Worksheet is a tool which may assist the specialist in the acquisition of pertinent information to be used in the admission decision. The interview procedure is also the first opportunity to gain qualitative behavioral information about the applicant.

**Screening Assessment**

The screening assessment procedure has been developed to provide a brief quantitative method of evaluation in the areas of cognition, communication and socialization.

At the present time, this screening device has not been standardized. Therefore, the interpretation of results is at the professional discretion of the interdisciplinary team. Data collection at a future time may assist in standardized procedures and decision makin

**Examinees Impressions**

Afterthe Interview and Screening Assessment arecompleted the examiner completes the Examiner's Impression form. This form helps to solidify judgments and impressions, in a check list format, of the applicant's behavior during the Interview and Screening procedures.

Ultimately, a decision needs to be made as to whether the applicant proceeds with the college admission process or is referred to other resources.

## Utilization of Student Profile

The final determination of admission must compare the anticipated student needs with the available resources within the program. A synthesis of the interview data, screening assessment and impressions must now be made and adapted to the Student Profile Chart (see Chapter Five). This is a graphic report of the student's strengths and limitations. From this profile one can begin to formulate the anticipated needs of the student.

After determining that the needs of the applicant can be appropriately addressed by the program, the student is admitted to the college program.

The completed college application is submitted to the college registrar for processing.

# *Screening and Assessment Forms*

# *ABI Applicant Tracking Sheet*

**Community College**
**Disabled Student Programs and Services**
**Brain Injured Student Program**

**Entering Student Tracking Sheet**

Student_____ S.S.# _____

Date of Birth _____ Telephone _____

Address _____

---

Date/Staff Initials

Referral source _____
Screening packet sent
Screening packet returned

Medical/rehabilitation records requested for certification of disabling condition

| hospital / agency | date received |
|---|---|
| | |
| | |
| | |
| | |
| | |

Review of application
Applicant meets definition as stated in Title V
If no, other referral made to _____
Interview and screening assessment
Applicant meets criteria for enrollment in the college
If no, other referral made to _____
College Admission
In-depth assessment

**Form** 2, **page 1**

Based on the Pre-Entry Screening Assessment, observation and professional judgment, in-depth assessment is recommended in the following areas:

| | date completed |
|---|---|
| cognition | _____ |
| psychosocial | _____ |
| communication | _____ |
| academic | _____ |
| psychomotor | _____ |
| vocational | _____ |
| independent living | _____ |

Specialists are not available within the program for _____ assessment, therefore a referral was made to _____ on _____. Assessment- results within • the program were received on _____

Specialists are not available within the program for _____ assessment, therefore a referral was made to _____ on _____. Assessment results were received on _____

IEP Process

# *Pre-Screening Packet Check List*

1. **Cover letter**
2. **Program description/brochure**
3. **Entrance Guidelines**
4. **College application**
5. DSP&S program application
6. **Release of Information Form(s)** for certification of disabling conditions, educational, medical and rehabilitation records.
7. **Return envelope** with mailing label if application/records are to be returned by mail

**Form** 3

# *Sample Cover Letter*

Today's date

Mr. James Jones
1123 First St.
Anytown, CA 88888

Dear Mr. Jones:

Thank you for your recent contact regarding possible enrollment in _____ Community College, Disabled Student Programs and Services /Acquired Brain Injury Program. Enclosed is an application packet which includes program information, applications, and release forms.

Please complete the applications and return them to us. Additionally, please complete, sign and mail the records' release forms directly to the hospitals and agencies which have provided services to you. Upon receipt of the completed applications and requested records, we shall be in contact with you regarding the status of your application. Once these records have been reviewed and it's determined that your application is appropriate, you will be invited to attend an interview and screening assessment. All requested information should be submitted to our office by _____, in order to be considered for the _____ semester/quaver which begins _____

Please contact our office if we can be of further acqictAnce.

Sincerely,

_____
DSP&S Specialist

# *Entrance Guidelines*

**L General Entrance Criteria**

The student shall:

1. meet individual college admissions requirements (refer to college catalog).

2. meet DSP&S requirements (Title V).

3. be willing and able to adhere to individual college rules and regulations.

4. be able to function within the scope of Disabled Student Programs and Services resources.

**IL Specific Entrance Criteria**

The student shall:

1. have medically verifiable acquired non-progressive impairment of brain functioning.

2. demonstrate sufficient self-help skills for basic bodily functions or provide own attendant care.

3. be medically stable.

4. have sufficient language comprehension skills to benefit from the educational program.

5. consistently refrain from behaviors which deny the personal rights or safety of others.

6. be able to participate in individual educational planning consistent with his or her abilities and program availability.

7. have potential to benefit from instruction in a group setting.

**DI. Program-Related Criteria**

The student shall demonstrate:

**1. Cognitive**

- attention span sufficient to participate in instruction.
- memory skills sufficient for learning new material.
- adequate judgment and problem-solving strategies consistent with health and safety.

2. **Communication**

- sufficient potential to benefit f___ instruction in receptive/expressive communication skills which may include the use of adaptive or assistive devices.

**3. Psychosocial**

- behavioral and emotional responses usually appropriate to the situation, i.e., personal hygiene and appropriate dress, emotional stability, interpersonal communication, tolerance of frustration.
- an ability to accept help and attempts to improve behavior.

**4. Academic**

- potential and ability to participate in special classes, demonstrating measurable progress in basic skills.

**5. Psychomotor**

- sufficient potential to benefit from group instruction in one or more of the following areas: adaptive physical education, kinesthetic, visual motor, fine and gross motor, or proprioceptive skill training.

**6. Vocational**

- sufficient potential to benefit f mil specific vocational services including: pre-vocational training, job training, selective placement, and follow-up assistance.

7. **Independent Living**

- sufficient potential to benefit fwut group instruction in independent living skills.

# *Interview Worksheet*

Name _____ Date _____

Address _____ Phone _____

_____ Guardian _____

Social Security # _____ Referred By _____

Interview Participants _____

_____

Attending Physician _____ Phone # _____

Marital Status _____

Currently Residing With _____ Children _____

Presently Employed _____ Present Occupation _____

D.R. Client _____

Counselor's Name _____

Counselor's Office _____

***Educational History:***

Last grade/degree completed _____

Pre-accident academic strengths and weaknesses _____

_____

History of special education or remedial classes. Describe _____

_____

_____

Form 6, page 1

History and description of the acquired brain injury.

Length of coma

Period of post-traumatic amnesia

Length and location of inpatient acute medical care

Length and location of rehabilitation care _____

Description of rehabilitation care

Current outpatient therapy status

Names and addresses of care providers:

*Physical Status:*

Seizures Seizure Medication Dosage

Mobility Limitations

Form 6, page 2

Paralysis or Weakness Legs: Right Left
Anns: Right Left
Hands: Right Left

Other

Fine Motor Problems

Vision: Acuity Field Loss Double Vision

Other

Hearing: Right Left Tolerance to noise

Other

Medications (specify dosage and frequency)

Other

*Social/Emotional Status*

Psychiatric history

Pre-Accident history

Post-Accident history

Criminal/behavior problems

**Form 6, page 3**

Drug/alcohol problems —

Current counseling and psychotherapy

Name and phone number of therapist

**Inquiry of specific functional areas:**

***Health Related***

Do you often feel dizzy?

Do you have headaches4'

Do you use alcohol?

Do you use drugs?

Do you smoke?

Do you drink beverages with caffeine?

When was your last medical check-up?

Are there any persistent medical problems that we haven't discussed?

Do you have any scheduled surgeries or hospitalizations?

Are you still receiving outpatient rehabilitation care?

Comments

*Cognitive*

Do you have memory problems?

Do you have difficulty finding your way around?

Do you have problems concentrating?

Do you find yourself making mistakes?

Do you have difficulty figuring out how to solve problems you face')

Do you use good judgment? _____

_____

Comments _____

_____

***Communication***

Do you have problems pronouncing words? _____

_____

Is it difficult to find the right words when you talk? _____

_____

Do you have difficulty following what is said in a conversation? _____

_____

Do you have difficulty writing? _____

_____

Comments _____

_____

*Psychosocial*

Are you able to get along with others? _____

_____

Do you experience mood swings? _____

_____

Are you able to tolerate frustration?

Do you have difficulty managing your anger?

Have you been able to maintain friendships since the accident?

Do you get upset with others easily?

Comments

*Academic*

Do you have difficulty spelling')

Do you have difficulty reading')

Do you understand what you read?

Do you remember what you read?

Do you have problems studying?

Do you think you can follow a one-hour lecture" _____

Do you think you can take notes" _____

Do you have difficulty calculating numbers?_____

Comments_____

***Psychomotor***

Do you have trouble walking?_____

Are you able to run?_____

Do you still play sports?_____

Which hand do you write with"_____

Describe level of physical endurance and stamina._____

Comments_____

***Vocational***

*What* is your current employment status9 _____

_____

If you are employed, how long have you had your job? _____

_____

What are your present career goals" _____

_____

What is your prior employment history? _____

_____

Comments _____

_____

***Independent Living***

What are your current living arrangements? _____

_____

How satisfied are you with your current living arrangements" _____

_____

What are your desired living arrangements? _____

_____

How are your homemaking skills" _____

_____

**Form 6, page 9**

Who manages your financial affairs"

Do you have any bank accounts"

Do you write your own checks"

Do you do your own shopping"

Are you your own guardian"

Do you have a driver's license and is it valid"

Do you drive a car"

Are you able to use public transportation"

Comments

***Personal Goals and Objectives***

In what way do you think this program might help you?

What are your educational goals"

What are your vocational goals"

What are your physical goals"

What are your social goals"

Comments

**Interviewer:**

# *Screening Assessment*

Name _____

Examiner _____

Date _____

Use of the Screening Assessment:

The following Screening Assessment provides a subjective 3-point rating scale for each of the items.

**0** = no response, unable to respond, or completely inacccurate response
1= somewhat accurate response
2 = appropriate response

The following materials will be needed before the screening assessment begins: book, pencil, key, index card with phrase "wink your left eye" printed plainly, a pencil and paper.

## Cognition

### Orientation

| | | |
|---|---|---|
| • Person: | Tell me your full name. | 0 1 2 |
| | Tell me your address. | 0 1 2 |
| | Tell me your place of birth. | 0 1 2 |
| • Time: | Tell me today's date. | 0 1 2 |
| | Tell me the season. | 0 1 2 |
| | How long has it been, in months, since Thanksgiving. (or the Fourth of July?) | 0 1 2 |

**Examiner's Note:** choose the holiday most distant from today's date.

| | | |
|---|---|---|
| • Place: | Where are you? | 2 |
| | What city are you in? | 0 1 2 |
| | What state are you in? | 0 1 2 |

**Immediate Memory**

- Name three common objects and **ask** the applicant to repeat them to you. (cat, house, boat) 0 1 2

**Examiner's Note:** If unable to immediately recall the objects, repeat until they are learned.

**Attention/Concentration**

- Subtract by 3's from 100. (100, 97, 94, 91, 88, 85, 82, 79) 0 1 2
- Recite letters of the alphabet that rhyme with the word "tree." (b, c, d, e, g, p, t, v, z) 0 1 2

**Delayed Memory**

- Ask for recall of three common objects in Immediate Memory section. 0 1 2

Total **Subscore** _____

## Language/Communication

- Name objects. 0 1 2

**Examiner's Note:** show a book, a pencil, and a key to the applicant and ask him/her to name it.

- Repeat — Mind your p's and q's. 0 **1** **2**

**Examiner's Note:** recite the phrase clearly and ask the applicant to repeat it.

- Follow a three-stage command: Open the book, put it on the floor, but first give me the pencil. 0 1 2

**Examiner's Note:** give the full command and ask the applicant to comply.

- Read and comply with the following: "Wink your left eye." (printed on an index card) 0 1 2

**Examiner's Note:** Present the index card to the applicant and ask him/her to read it.

- Write your name. 0 1 2
- Write your address. 0 1 2
- Write your phone number. 0 1 2

**Examiner's Note:** Provide pencil and paper.

- Tell me three things about the weather today. 0 1 2
- What does the following proverb mean? 0 1 2
  *"Don't count your chickens before they've hatched?"*

**Total Subscore** _____

## Psychosocial

After completing the interview and screening questionnaire, rate the following areas:

- **Expressed** information and responded appropriately to questions? 0 1 **2**
- Demonstrated appropriate social interaction? 0 1 2
- Controlled and exhibited appropriate emotional responses? 0 1 2
- Exhibited appropriate affect (feeling tone)? 0 1 **2**
- Appropriately initiated conversation? 0 1 **2**
- Exhibited appropriate personal hygiene? 0 1 **2**

**Total Subscore** _____

**Composite Score** _____

**Examiner's Note:** Add total subscores for cognition, language/communication, and psychosocial and derive composite score. The interpretation of the sub-scores and composite score is presently up to the professional judgment of the interdisciplinary team.

# *Examiner's Impressions*

Check the space beside the statements that best describe the applicant.

**Adjustment:**

_poised _____ tense _____ **at** ease _____ anxious
___ hostile _____ _shy excitable easily upset
___ cooperative _____ needs frequent reassurance

Other _____

**Responsiveness:**

___ alert _____ hyperactive indecisive _____ deliberate
___ withdrawn _____ daydreams confused _____ hesitant
___ irrelevant or bizarre responses

Other _____

**Attention:**

listens carefully inattentive

Other _____

**Relations with others:**

outgoing, good natured friendly
seeks attention appropriately intrusive

Other _____

**Self-criticism:**

extremely critical of self boastful

Other _____

**Form 8, page 1**

**Motivation:**

_eager _apathetic _resistant
indifferent _guarded, suspicious

Other _____

**Verbalization:**

talkative word finding problems
confused gets point across easily
difficulty in expression

Other _____

_Applicant exhibits basic appropriate adaptive behavior patterns compatible with being a student at a community college.

Applicant does not exhibit appropriate adaptive behavior patterns compatible with being a student at a community college.

Sugeested referrals:

_____

_____

_____

**Form 8, page 2**

# Information From the Internet

The World Wide Web on the Internet is changing the way information can be obtained. This ABULD Training Guide section contains print copies of many sites and some articles printed from the Web.

The information is broken up into two main content areas: learning disabilities and traumatic brain injury.

Use this information to get an overview of what is current, to see where to go for more information, and to understand how important it **is** to "get on-line."

The URLs, the Internet addresses for the information, are usually located in the upper right-hand corner of the pages.

## Web Pages Referenced for Learning Disabilities

- **nat Center to Improve Practice in Special Education**

Computer Supported Stud[y] Strategies for LD
Computer Based Information Organizers
Reading and Writing
Using Inspiration
Organizing Information with Software Tools
National Center to Improve Practices in Special Education
NCIP Library Table of Contents

### UCSF Research on Language Learning Disability and Dyslexia

LD Remediation Research
Other Internet Information
The Dana Consortium on Language-Based Learning Disabilities
Speech Processing
Language Based Learning Disability:Interactive Training Games
Language based learning disabilities and dyslexia
Neurophysiology and Models
Publications/Language Based Learning Disability:Remediation Research
What's New
Baltic DYSLEXIA RESEARCH LAB ApS

[I]**P**--EJ:-Learning Disabilities

### Information from the Learning Disabilities Association (LDA)

Learning Disabilities Association of America
LDA Resources
They Speak for Themselves
Teaching Reading: Definition of Terms
LDA Bookstore
LDA Bookstore - Adults
LDA Literary Bookstore - Research/Educational
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Technology
Research

- **Government**

Attention Deficit Hyperactivity Disorder - DECADE OF THE BRAIN

**Information from the Rebus Institute**

Rebus Institute
Employer Accommodation
Central Auditory Processing Disorder

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## Web Pages Referenced for Tramatic Brain Injury

John & Clara's **TBI** Related Sites and Info
TBI of CT Links To Other ABI/TBI Sites
Traumatic Brain Injury Project - Home Page
Traumatic Brain Injury Project - Articles
Traumatic Brain Injury Project - Books
Traumatic Brain Injury Project - Monographs
Ohio Valley Center for Brain Injury Prevention and Rehabilitation
ABackans Diversified Computer Processing, Inc. - Links for Multimedia
Re-Cognition's Brain Book - Home Page
About Re-Cognition
Brain Injury Resources - Links to sites outside the U.S.
Brain Injury Research News - From UCLA
Predicting Outcome after TBI - From University of Washington
The Whole Brain Atlas - From Harvard

# 31 Principles of Critical Thinking

## Introduction

**The following pages provide a brief explanation of some of the basic principles of critical thinking. These same principles and many of the applications are relevant to most grade levels, even graduate school. This material has been used successfully, for example, in introductory critical thinking in-service for college professors, as well as for early elementary teachers. It should be used as a stimulus for thinking about critical thinking, not as a set of dogmatic pronouncements to be memorized.***

***This material, from Richard Paul, a professor at Sonoma State University, is from a 1987 conference on critical thinking.**

**Other materials may be obtained from the following resources:**

**The Center for Critical Thinking and Moral Critique**
**Sonoma State University**
**Rohnert Park, CA 94928**

**(707) 664-2940**

**The Foundation for Critical Thinking**
**4655 Sonoma Mountain Road**
**Santa Rosa, CA 95404**

**(800) 833-3645**

**The URL for these resources:**
**http://www.sonoma.edu/cthink/default.html**

## *S-1* FOSTERING INDEPENDENT THINKING

Principle: Critical thinking is autonomous thinking, thinking for oneself. Many of our beliefs are acquired at an early age, when we have a strong tendency to accept beliefs for irrational reasons (because we want to believe, because we are rewarded for believing). The critical thinker uses critical skills to reveal and eradicate beliefs to which he cannot rationally assent. In formulating new beliefs, the critical thinker does not passively accept the beliefs of others; rather he analyzes issues himself, rejects unjustified authorities, and recognizes the contributions of justified authorities. He does not accept as true, or reject as false, beliefs he does not understand. He is not easily manipulated.

## *S-2* DEVELOPING INSIGHT INTO **EGO/SOCIOCENTRICITY**

Principle: Egocentricity is the confusion of immediate perception with reality. It manifests itself as an inability or unwillingness to consider others' points of view, to accept ideas or facts which would conflict with gratification of desire. In the extreme, it is characterized by a need to be right about everything, a lack of interest in consistency and clarity, an 'all or nothing' attitude CI am 100% right; you are 100% wrong"), and a lack of self-consciousness of one's own thought processes. The egocentric individual is concerned only with the appearance of truth, fairness, and fairmindedness; not with actually being correct, fair, or fairminded. Egocentricity is the opposite of critical thought.

As people are socialized, egocentricity tends to produce sociocentricity. Egocentric identification extends to groups. The individual goes from "I am right!" to " We are right!" To put this another way, people find that they can often best satisfy their egocentric desires through a group. "Group think" results when people egocentrically attach themselves to a group. One can see this in both children and adults: My daddy is better than your daddy! My school (religion, country, race, etc.) is better than yours.

If egocentricity and sociocentricity are the disease, self-awareness is the cure. In cases in which his own egocentric commitments are not supported, hardly anyone accepts another's egocentric reasoning. Most can identify the sociocentricity of members of opposing groups. Yet when we are thinking egocentrically or sociocentrically, it seems right to us (at least at the time). Our belief in our own rightness is easier to maintain because we suppress the faults in our thinking. We automatically hide our egocentricity from ourselves. We fail to notice when our behavior contradicts our self-image. We base our reasoning on false assumptions we are unaware of making. We fail to make relevant distinctions, though we are otherwise aware of, and able to make them (when making such distinctions does not prevent us from getting what we want). We deny or conveniently 'forger facts inconsistent with our conclusions. We often misunderstand or distort what others say.

The solution, then, is to reflect on our reasoning and behavior; to make our assumptions explicit, critique them, and, when they are false, stop making them; to apply the same concepts in the same ways to ourselves and others; to consider every relevant fact, and to make our conclusions consistent with the evidence; and to listen carefully and open-mindedly to those with whom we

disagree. We can change these tendencies when we see them for what they are: irrational and unjust. Therefore, the development of students' awareness of their egocentric and sociocentric patterns of thought is a crucial part of education in critical thinking.

## S-3 **FOSTERING FAIRMINDEDNESS/RECIPROCITY**

Principle: To think critically about issues we must be able to consider the strengths and weaknesses of opposing points of view. Since "Weal thinkers value fairmindedness, and recognize their tendency to be unfairminded, **they** feel that it is especially important that they entertain positions with which they disagree. They realize that It is unfair either to judge the ideas of another until they fully understand them, or act on their own beliefs without giving due consideration to relevant criticisms. **The process** of considering an opposing point of view aids critical thinkers in recognizing the logical components of their beliefs, (e.g. key concepts, assumptions, implications, etc.) and puts them in a better position to amend those beliefs.

Furthermore, critical thinkers recognize that their behavior affects others, and so consider their behavior from the perspective of those others.

## S-4 **EXPLORING THOUGHTS UNDERLYING FEELINGS**

Principle: Critical thinking requires self-understanding. A critical thinker realizes that his feelings are his response (but not the only possible, or even necessarily the most reasonable response) to a situation. He knows that his feelings would be different if he had a different understanding or interpretation of a situation. He recognizes that thoughts and feelings, far from being different kinds of 'things.' are two aspects of his responses. The uncritical thinker sees no relationship between his feelings and his thoughts.

We can better understand our feelings by asking ourselves "What are the thoughts behind this feeling? To what conclusion have I come? What is my evidence? What assumptions am I making? What inferences am I making? Are they good inferences? We can learn to seek patterns in our assumptions, and so begin to see the unity behind our separate emotions. Understanding one's self is the first step toward self-control and self-improvement.

## S-5 **SUSPENDING JUDGMENT**

Principle: Critical thinkers distinguish what they know from what they don't know. They are not afraid of saying "I don't know" when they are not in a position **to** be sure of the truth of a claim. They are able to make this distinction because they are in the habit of asking themselves "How could one know whether or not this is true? To say °In this case I must suspend judgment until I find out x, and y," does not make them anxious or uncomfortable. They are willing to rethink conclusions in the light of new knowledge.

## S-6 AVOIDING OVERSIMPLIFICATION

Principle: It is natural to seek to simplify problems and experiences to make it easier to deal with them. Everyone does this. However, the uncritical thinker often oversimpnes, and as a result misrepresents problems and experiences. What should be recognized as complex, intricate, or subtle is viewed as simple, elementary, and obvious. For example, it is typically an oversimplification to view people or groups as *all good* or ***all-bad,*** actions **as *always tight*** or *always* ***wrong,*** one contributing factor as *the cause, etc.,* and yet such beliefs are common. The critical thinker tries to find simplifying patterns and solutions but not by misrepresenting or distorting. Making a distinction between useful simplifications and misleading Oversimplifications is important to critical thinking.

## S-7 TRANSFERRING IDEAS TO NEW CONTEXTS

Principle: An idea's power is limited by our capacity to see its application. As we transfer an idea from one situation to another, the idea becomes richer as our own insight grows. The critical thinkers ability to use ideas mindfully enhances her ability to transfer ideas critically. She practices using ideas and insights by appropriately applying them to other situations. This allows her to organize materials and experiences in different ways, to compare and contrast alternative labels, to integrate her understanding of different situations, and to find the best way to conceptualize novel situations. Each new application of the idea enriches understanding of the idea and of the situation.

## S-8 DEVELOPING ONE'S PERSPECTIVE

Principle: The world is not given to us sliced up into categories with pre-assigned labels on them. There is always a large number of ways that we can "divide up" and so experience the world. How we do so is essential to our thinking and behavior. Uncritical thinkers assume that their perspective on things is the only correct one. Selfish critical thinkers manipulate the perspectives of others to gain advantage for themselves. Fairminded critical thinkers learn to recognize that their own way of thinking and that of all other perspectives are subject to error. They learn to develop their point of view through a critical analysis of their experience. They learn to question commonly accepted ways to understand things and avoid uncritically accepting the viewpoint of their peer group or society. They know what their perspective is and can talc insightfully about it.

## S•9 CLARIFYING ISSUES AND CLAIMS

Principle: The more completely, clearly, and accurately an issue or claim is formulated, the easier and more helpful the discussion of its settlement or verification. Given a clear statement of the issue, and prior to evaluating conclusions or solutions, it is important to recognize what is required to settle the issue. And before we can agree or disagree with a claim, we must understand it clearly. It

makes no sense to say I don't know what you are claiming, but I *deny* **ft** whatever is it.' The critical thinker recognizes problematic claims, concepts, and standards of evaluation, making sure that understanding preceedes judgment.

## S-10 CLARIFYING IDEAS

Principle: Critical, independent thinking requires clarity of thought. A clear thinker understands ideas, and knows what kind of evidence is required to justify applying a word or phrase to a situation. The ability to supply a definition is not proof of understanding. One must be able to supply dear, obvious examples, and to use the idea appropriately. In contrast, for an unclear thinker, words float through the mind unattached to dear, specific, concrete cases. Different ideas are confused. Often the only criterion for the application of a term is that the case in question 'seems like' an example. Irrelevant associations are confused with what are necessary parts of the idea (e.g., 'Love involves flowers and candle-light.") Unclear thinkers lack independence of thought because they lack the ability to analyze an idea, and so critique its application.

## S-11 DEVELOPING CRITERIA FOR EVALUATION

Principle: Evaluation is fundamental to critical thinking. The critical thinker realizes that expressing mere preference does not substitute for evaluating. Awareness of the process of evaluating aids fairminded evaluation. This process requires the development and use of criteria. When developing criteria, critical thinkers should understand the object and purpose of the evaluation, and what function the thing being evaluated is supposed to serve. Critical thinkers take into consideration different points of view when attempting to evaluate something. They ask themselves "What, if anything, is a necessary part of the criteria for evaluation?

## S-12 EVALUATING SOURCE CREDIBILITY

Principle: Critical thinkers recognize the importance of using reliable sources of information when formulating conclusions. They give less weight to sources which either lack a track record of honesty, contradict each other on key questions, are not in a position to know, or have a vested interest in selling a product or idea. Critical thinkers recognize when there is more than one reasonable position to be taken on an issue; they compare alternative sources of information, noting areas of agreement; they analyze questions to determine whether or not the source is in a position to know; and they gather information where sources disagree.

## S-13 RAISING AND PURSUING ROOT QUESTIONS

Principle: The critical thinker can pursue an issue in depth, covering relevant aspects, in an extended process of thought or discussion. When reading a passage, she looks for issues and ideas underlying the claims expressed. She comes to her own understanding of the details she learns, placing them in the larger framework of the subject or her thought. She can move between basic underlying ideas, and specific details. When pursuing a line of thought, she is not continually dragged off subject. She uses important issues to organize her thought, and is not bound by the organization given by another. Nor is she unduly influenced by the

language of another. If she finds that a set of categories or distinctions is more appropriate than that suggested by another, she will use ft. Recognizing that categories serve human purposes, she uses those categories which best serve her purpose at that time. She is not limited by accepted ways of doing things. She evaluates both goals, and how to achieve them.

## S-14 EVALUATING ARGUMENTS

Principle: Rather than carelessly agreeing or disagreeing with arguments based on their preconceptions of what is true, critical thinkers use analytic tools to determine the relative strengths and weaknesses of arguments. When analyzing arguments, critical thinkers recognize the importance of asking, "What reasons support this conclusion? What would someone who disagrees with this argument say?" They are especially sensitive to the strengths of arguments that they disagree with, recognizing the tendency of humans to ignore, oversimplify, distort, or otherwise dismiss them. The critical thinker analyzes questions and places conflicting arguments in opposition to one another, as a means of highlighting key ideas, assumptions, implications, etc.

## S-15 GENERATING OR ASSESSING SOLUTIONS

Principle: Critical problem solvers use everything available to them to find the best solution they can. They evaluate solutions, not independently of, but in relation to one another (since best' implies a comparison). They have reflected on such questions as "What makes some solutions better than others? What does the solution to this problem require? But alternative solutions are often not given, they must be generated or thought•up. Critical thinkers must be creative thinkers as well; generating possible solutions in order to find the best one. Very often a problem persists, not because we can tell which available solution is best but because the best solution has not yet been made available: no one has thought it up yet. Therefore, although critical thinkers use all available information relevant to their problems, including the results of solutions others have used in similar situations, they are flexible and imaginative, willing to try any good idea whether **ft** has been done before, or not.

Fairminded thinkers take into account the interests of everyone affected by the problem and proposed solutions. They are more committed to finding the best solution, than to getting their way.

## S-16 EVALUATING ACTIONS AND POLICIES

Principle: Critical thinking involves more than an analysis of clearly formulated instances of reasoning; ft involves analysis of behavior or policy and a recognition of the reasoning that behavior or policy presupposes. When evaluating the behavior of themselves and others, critical thinkers are conscious of the standards they use, so that these, too, can become objects of evaluation. Critical thinkers are especially concerned with the consequences of actions, and recognize these as fundamental to the standards for assessing both behavior and poky.

Critical thinkers base their evaluations of behavior on assumptions to which they have rationally assented. 'They have reflected on such issues as: What makes some actions right, others wrong? What rights do people have? How can

I know when someone's rights are being violated? Why respect people's rights? Why be good? Should I live according to rules? If so, what rules? If not, how should I decide what to do? What policies should be established and why?

## S-17 CLARIFYING OR CRITIQUING TEXTS

Principle: Critical thinkers read with a healthy skepticism. But they do not doubt or deny until they understand. They clarify before they judge. They realize that everyone is capable of making mistakes and being wrong, including authors of textbooks. They also realize that, since everyone has a point of view, everyone sometimes leaves out some relevant information. No two authors would write the same book, or write from exactly the same perspective. Furthermore, since a textbook is an introduction to the subject, it is not a complete description of it. Therefore, critical readers recognize that reading a book is reading one limited perspective on a subject, and that more can be learned by considering other perspectives.

## S-18 MAKING INTERDISCIPLINARY CONNECTIONS

Principle: Though in some ways ft is convenient to divide knowledge up into disciplines, the divisions are not absolute. The critical thinker doesn't allow the somewhat arbirtary distinctions between academic subjects to control his thinking. When considering issues which transcend subjects, he brings relevant ideas, knowledge and insights from many subjects to the analysis. He makes use of insights into one subject to inform his undertanding of other subjects. There are always connections between subjects (language and logic; history, geography, psychology, anthropology, physiology; politics, geography, science, ecology; math, science, economics). To understand, say, reasons for the American Revolution (historical question) insights from technology, geography, economics, philosophy, etc., can fruitfully apply.

## S-19 CONDUCTING SOCRATIC DISCUSSION

Principle: The critical thinker is nothing if not a questioner. The ability to question and probe deeply, to get down to root ideas, to get beneath the mere appearance of things, is at the very heart of the activity. And, as a questioner, she has many different kinds of questions and moves available, and can follow up her questions appropriately. She can use questioning techniques, not to make another look stupid, but to learn what he thinks, helping him develop his ideas, or as a prelude to evaluating them. When confronted with a new idea, she wants to understand it, to relate It to her experience, and to determine its implications, consequences, and value. Probing questions are the tools by which these goals are reached.

Furthermore, the orificel thinker is comfortable being questioned. She doesn't become offended, confused, or intimidated. She welcomes good questions, realizing that they help her improve her ideas.

## S-20 FOSTERING DIALOGICAL THINKING

Principle: Dialogical thinking refers to thinking that involves a dialogue or extended exchange between different points of view, cognitive domains, or frames of reference. Whenever we consider ideas or issues deeply, we naturally explore the connections of these ideas and issues to other ideas and issues within different domains or points of view. The critical thinker needs to be able to engage in fruitful, exploratory dialogue, proposing ideas, probing roots, bringing subject-matter insights and evidence to bear, testing ideas, and moving between various points of view. When we think, we often engage in dialogue, either inwardly or aloud with others. We need to integrate critical thinking skills into that dialogue so that it is as fruitful as possble. Socratic questioning is one form of dialogical thinking.

## S-21 FOSTERING DIALECTICAL THINKING

Principle: Dialectical thinking refers to dialogical thinking conducted in order to test the strengths and weaknesses of opposing points of view. Court trials and debates are dialectical in nature. As soon as we begin to explore ideas we find that some clash or are inconsistent with others. If we are to integrate our thinking, we need to assess which of the conflicting ideas we will provisionally accept and which we shall provisionally reject, or, which parts of the views are strong, and which weak. The critical thinker needs to develop dialectical reasoning skills, so that her thinking not only moves comfortably between divergent points of view or lines of thought, but also can make some assessments in light of the relative strengths and weaknesses of the evidence or reasoning presented. Hence, when thinking dialectically, the critical thinker can use the micro-skills appropriately.

## *S-22* DISTINGUISHING FACTS FROM IDEALS

Principle: Self-improvement and social improvement are presupposed values of critical thinking. Critical thinking, therefore, requires an effort to see ourselves, others, and the world accurately. This requires a recognition of the gap between facts and ideals. The fairminded thinker values truth and consistency and hence works to minimize these gaps. The confusion of facts with ideals prevents us from taking steps to minimize them. A critical education strives to highlight discrepancies between facts and ideals, and proposes and evaluates methods for minimizing them.

## *S-23* INTEGRATING CRITICAL VOCABULARY

Principle: An essential requirement of critical thinking is the ability to think about thinking. The analytical vocabulary in the English language (such terms as 'assume', 'infer, 'conclude', 'criteria', 'point of view', 'relevance', 'issue', 'contradiction', 'credibility', 'evidence', 'distinguish') enables us to think more precisely about our thinking. We are in a better position to assess reasoning (our own, as well as that of others) when we can use analytic vocabulary with accuracy and ease.

## *S-24* DISTINGUISHING IDEAS

Principle: Critical thinkers distinguish between different senses of the same word, recognizing the different implications of each. They understand that a writer's or speaker's purposes determine the ways he uses language. Critical thinkers recognize when two or more concepts are similar or have an important relationship to one another, yet have different meanings. They recognize the different implications of these words. They make clear distinctions, and do not confuse (literally, 'fuse together') distinct ideas.

## *S-25* EXAMINING ASSUMPTIONS

Principle: We are in a better position to evaluate any reasoning or behavior when all of the elements of that reasoning or behavior are made explicit. We base both our reasoning and our behavior on beliefs we take for granted. We are often unaware of these assumptions. Although assumptions can be either true or false, it is only by recognizing them that we can evaluate.them. Critical thinkers have a passion for truth, and for accepting the strongest reasoning. Thus, they have a passion for seeking out and rejecting false assumptions. They realize that everyone makes some questionable assumptions. They are willing to question, and have others question, even their own most cherished assumptions. They consider alternative assumptions. They base their acceptance or rejection of assumptions on their rational scrutiny of them. They hold questionable assumptions with an appropriate degree of tentativeness.

Independent thinkers evaluate assumptions for themselves, and do not simply accept the assumptions of others, even those assumptions made by everyone they know.

## *S-26* DISTINGUISHING RELEVANT FROM IRRELEVANT FACTS

Principle: Critical thinking requires sensitivity to the distinction between those facts that are relevant to an issue and those which are not. Critical thinkers focus their attention on relevant facts and do not let irrelevant considerations affect their conclusions. Furthermore, they recognize that a fact is only relevant or irrelevant in relation to an issue. Information relevant to one problem may not be relevant to another.

## *S-27* MAKING PLAUSIBLE INFERENCES

Principle: Thinking critically involves the ability to reach sound conclusions based on observation and information. Critical thinkers distinguish their observations from their conclusions. They look beyond the facts, to see what those facts imply. They know what the concepts they use imply. They also distinguish cases in which they can only guess from cases in which they can safely conclude. Critical thinkers recognize their tendency to make inferences that support their own egocentric or sociocentric world views and are therefore especially careful to evaluate inferences they make when their interests or desires are involved. Remember, every interpretation is based on inference, and we interpret every situation we are in.

## *S-28* SUPPLYING EVIDENCE FOR A CONCLUSION

Principle: Critical thinkers, interested in the free exchange of ideas, are comfortable being asked to describe the evidence on which their conclusions are based (rather than finding such questions intimidating, confusing, or insulting). They value reaching conclusions based on sound reasoning (rather than, say, convenience or whim). They realize that unstated, unknown reasons can be neither communicated nor critiqued. They are able to cite relevant and sufficient evidence to support their conclusions.

## *S-29* RECOGNIZING CONTRADICTIONS

Principle: Consistency is a fundamental ideal of critical thinkers. Critical thinkers can recognize when two claims are contradictory. They strive to remove contradictions from their beliefs, and are wary of contradictions in others. Fairminded thinkers judge like cases in like manner. Perhaps the most difficult form of consistency to achieve is that between word and deed. Self-serving double standards are one of the most common problems in human life. Children are in some sense aware of the importance of consistency ('Why don't I get to do what he gets to do?') They **are** frustrated by double-standards, yet are given little help in getting insight into them and dealing with them.

## *S-30* EXPLORING IMPLICATIONS AND CONSEQUENCES

Principle: The critical thinker can take statements, recognize their implications (i.e. if x is true, then y must also be true), and develop a fuller, more complete understanding of their meaning. He realizes that to accept a statement he must also accept its implications. By following out the implications of subtle changes in a story, or instance of reasoning, critical thinkers see how such changes can affect meaning, often in significant ways.

## *S-31* REFINING GENERALIZATIONS

Principle: One of the strongest tendencies of the egocentric, uncritical mind is to see things in terms of black and white, 'all right" and "all wrong." Hence, beliefs which should be held with varying degrees of certainty are held as certain. Critical thinkers are sensitive to this problem. They understand the relationship of evidence to belief and so qualify their statements accordingly. The tentativeness of many of their beliefs is characterized by the appropriate use of such qualifiers as 'highly likely', 'probably', 'not very likely', 'highly unlikely', 'often', 'usually', 'seldom', 'I doubt', 'I suspect', 'most', 'many, and 'some'. Critical thinkers scrutinize generalizations, probe for possible exceptions, and then use appropriate qualifications. The critical thinker is not only clear, but also *exact* or *precise.*

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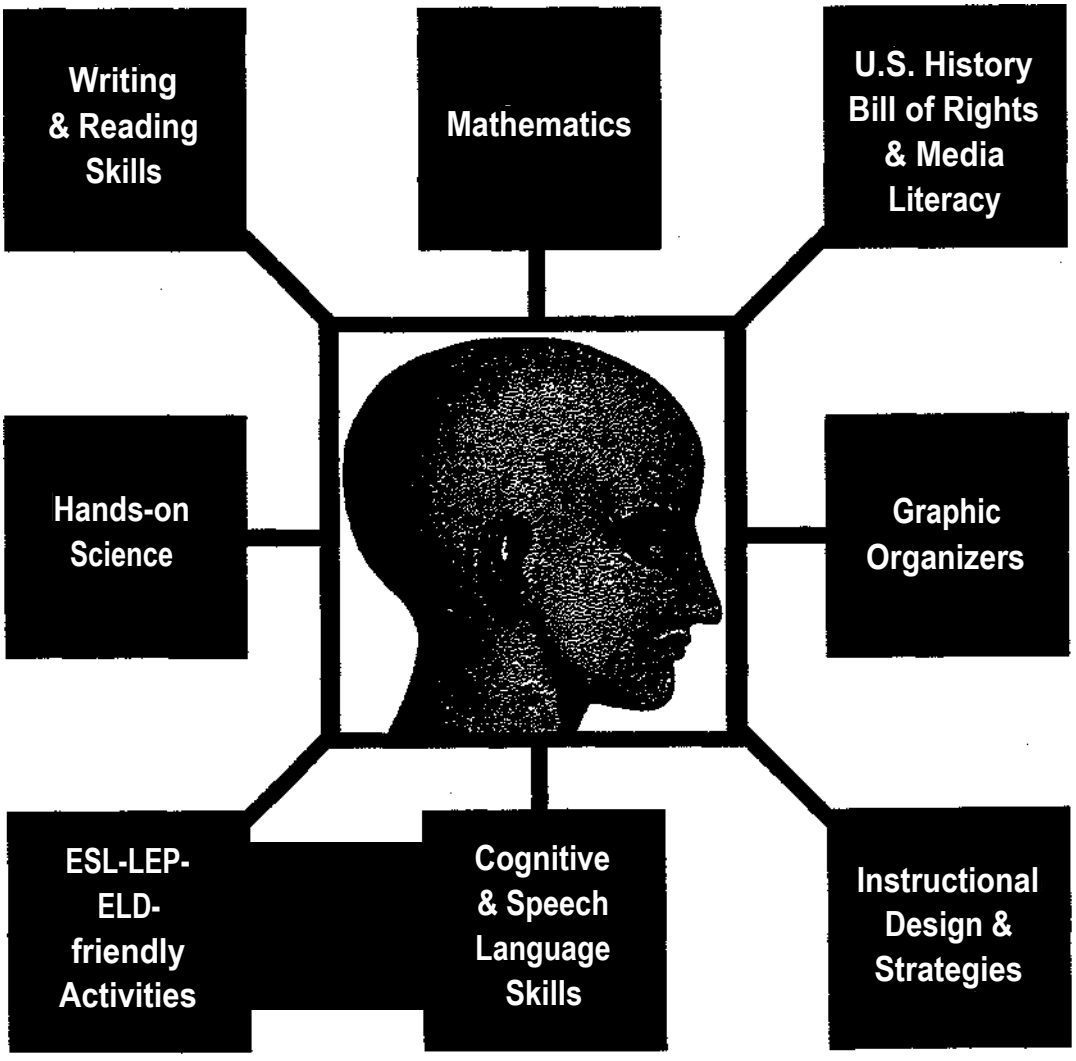


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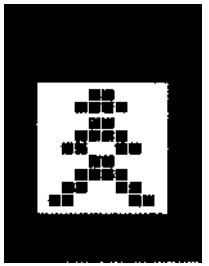

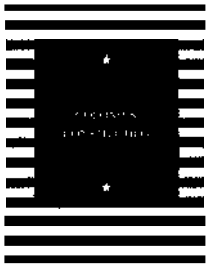

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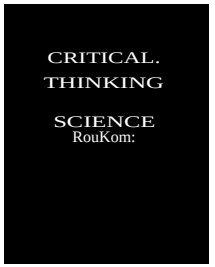


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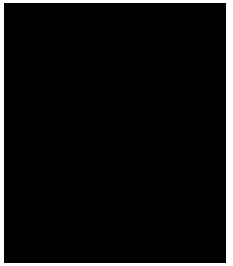

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# Selecting Software For Students With Learning Disabilities

The High Tech Center Training Unit
of the California Community Colleges

# Selecting Software for Students with Learning Disabilities

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# Introduction

In recent years, standardized assessment practices for identification of students with Learning Disabilities (LD) have been adopted by all California community colleges. This process has provided invaluable assistance in assuring that the unique educational needs of students with learning disabilities are identified and addressed.

In 1989 the California Community Colleges Chancellor's Office funded the development of the Computer Assisted Record-keeping and Scoring (CARS) program, a software tool intended to record and integrate findings from various LD assessment instruments. While it provided an excellent mechanism for assisting in the identification of students eligible for learning disabilities services, High Tech Center Training Unit (HTCTU) staff believed that information from CARS could also be used to match appropriate computer-assisted instructional software to the learning needs of students with a specific deficit or deficits. This guide is the product of those beliefs.

The HTCTU has been privileged to facilitate the efforts of a state-wide team of Learning Disabilities and High Tech Center specialists from the California community colleges in developing this guide. Its purpose is to provide instructors with the information necessary to evaluate the content and instructional effectiveness of any software program relative to the needs of a student with a learning disability.

Although specific computer-assisted instruction (CAI) software is identified, these programs should be viewed as prototypic examples rather than prescriptive recommendations. This guide is not intended to be a simple software "cookbook," but rather as the next step in the ongoing process of learning to identify and use educational software in specific, instructionally effective and creative ways. It is a part of the process of bringing technology into the classroom and education into the 21st century.

In consultation with California community college assessment testing specialists, subtests from the Wechsler Adult Intelligence Scale-Revised (WAIS-R), the Wide Range Achievement Test-Revised (WRAT-R), the Woodcock Johnson Psychoeducational Battery-Revised (WJ-R), and Degrees of Reading Power were identified as capable of yielding information about learning deficits which could be addressed by CAI. These identifiable deficit areas have been used as the organizational framework for this guide. Each deficit area has its own chapter which is divided into assessment and software sections.

## The Deficit Areas

Fourteen deficit areas were divided into two broad categories, cognitive and achievement:

**Cognitive**

- Long Term Retrieval
- Short Term Memory
- Processing Speed
- Auditory Processing
- Visual Processing/Perceptual Organization
- Comprehension-Knowledge/
  Verbal Comprehension/Expression
- Fluid Reasoning and Abstract Reasoning
- Freedom from Distractibility

**Achievement**

- **Basic Reading Skills**
- Reading Comprehension
- Basic Mathematics Skills
- Mathematical Reasoning
- Basic Writing Skills
- Written Expression

The assessment section contains:

brief descriptions of the tests (or test modules) used to assess a given cognitive or achievement area, and

– descriptions of the day-to-day effect such deficits are likely to have on the student's academic performance and ability to function in a college environment.

The software section contains:

– the instructional goals which the software must achieve in addressing the effects of the targeted learning deficit;

– a review of instructional considerations summarizing the wisdom, teaching experience, pragmatic skills and general working knowledge of the specialists who contributed to this guide and who have direct experience with CAI for the deficit area under discussion;

– a description of the software characteristics needed to work effectively with a particular learning deficit: e.g., instructional design, methodology, learning levels, information feedback, use of repetition, color, sound or graphics (note that in many instances description of the unique importance and use of a basic software characteristic is also included); and

software examples providing specific titles of programs which demonstrate the characteristics of software required for a particular deficit area (note that in some instances no single title meets all of the requirements so a selection of program types, which together meet the requirements, has been assembled).

## Special Considerations

Computer assisted instruction can be a useful and effective teaching/learning tool when incorporated properly into a larger array of instructional activities. Productive use of CAI requires the instructor to have a clear understanding of a specific instructional goal for a student and how the software she/he intends to use will support the achievement of all or part of that goal. Effective use of CAI, in general, requires an in-depth knowledge of each software program. In focusing on a deficit area, often the instructor may select only a single exercise from a larger program or a series of programs each of which meets some portion of the overall instructional goal.

The instructor must provide the student with an explanation of the purpose of the software, help students implement learning strategies, monitor progress, and make adjustments in program parameters and instructional goals as needed. Effective use of instructional software engages both instructor and student in a mutually rewarding teaching/learning experience.

We are not suggesting that deficits can, or will be, "fixed" through the use of software. Neither are we proposing that software be casually selected and used on the basis of a single subtest score. Deficits to be addressed by CAI should be carefully identified through combinations of tests and subtests (referred to as clusters by the WJ-R and Scales by the WAIS-R). As noted in the Woodcock-Johnson examiners manual, "Cluster interpretation minimizes the danger of generalization from the score for a single narrow behavior to a broad multifaceted ability." (pg. 24, WJ-R Cog. Examiners Manual)

Computer assisted instruction can provide highly specialized support for a wide range of students. We look forward to your comments and suggestions as you use this guide. The development of this text is an evolutionary process which will change as better technology becomes available and instructional methods are refined. We hope the first edition of the work will provide you with a useful tool for better utilizing the software resources you already have and for selecting new ones in the future.

# General Guidelines

**General Guidelines: Computer-Assisted Instruction**

Determining the appropriateness of software for any given student or group of students requires many of the same skills instructors already use in evaluating instructional resources such as books, slides, video, handouts and audio tapes. Although the perception exists that evaluating software is very different from evaluating more traditional types of instructional media, in fact, the processes have a great deal in common.

The following guidelines provide instructors with the "ideal" general characteristics of instructional software. It is important to understand that the probabilityof finding a single software program which includes all of these characteristics is unlikely. More commonly, as with other resource materials, instructors will use portions of several programs to meet their instructional goals. When evaluating and comparing software, the instructor might use the following questions.

Organization

- Does the software provide a clearly defined set of goals and objectives and a series of activities or presentations which lead to their achievement?
- Does each module or lesson focus on a particular topic, idea, or lesson?
- Does the software provide an organizational structure that allows easy access to any exercise, example or instructional component?
- Does the program provide clear and simple instructions for students and instructors on-line and in an accompanying manual?
- Does the software provide a data collection mechanism that automatically captures pertinent information, allows for manual input, and displays, prints and stores (in graphs,

charts and text) cumulative data showing areas of student progress and difficulty?

- Does the program provide authoring components that are easy to use (for editing and entering new data)?

**Methodology**

- **Does** the software provide a broad perspective of different cultures through examples that include students and student interests of various ethnic and racial backgrounds?
- Does the software provide a variety of instructional formats and/or methods that take into account diversity in student learning styles?
- Does the software provide effective sequencing of information?
- Does the software link the presentation of new information to evidence of success with previous learning tasks?
- Are the quiz and review components linked to the program goals and objectives?
- Are the vocabulary, sentence structure and content of the software appropriate to the age group with which it will be used?
- Does the software provide relevant and up to date content material and exercises?
- Is the feedback provided by the software meaningful? Does feedback about incorrect responses provide useful information about the type of error, how to make corrections and how to proceed through the remaining material?
- Does the feedback support the learning process, promote further interaction with the software, and avoid using methods a student may find threatening, embarrassing, or intimidating?
- Does the software provide options for automatic or manual progression or regression through the hierarchy of content, as well as a variety of presentation styles, based on student responses?

Design

- Does the software use graphics, sound, buttons, etc. in ways which enhance (not distract from) the program's instructional objectives?
- Does the program incorporate screen designs and text display that are dynamic enough to be pleasing to the student's eye, sustain interest in the program and contribute to the instructional objective?
- Does the software provide control options that allow the student or instructor to set graphic, text, sound and motion attributes, such as color combinations, size of fonts, volume, and playback features?
- Does the program provide easy-to-use supportive materials and documentation for students and teachers such as manuals, activity sheets and handouts?
- Does the program provide maximum compatibility with system software and assistive computer hardware and software?

# Cognitive Deficits

# Long Term Retrieval

**Assessment Measures**

Long term retrieval measures proficiency in storing and retrieving information over periods of time. It involves the ability to learn by making associations.

The following tests of the WJ-R measure long term retrieval:

1:1 *Memory for Names [test 11*

This test measures the student's ability to make auditory-visual associations between pairs of unfamiliar stimuli (auditory-visual association).

1:3 ***Visual-Auditory Learning*** *(test 81*

This test measures the student's ability to make visual-auditory associations by pairing visual symbols with familiar words (visual-auditory association).

No subtests of the WAIS-R isolate long term retrieval. The information subtest measures associative memory which is content/culture based and is broader than long term retrieval.

**Functional Manifestations**

If a student demonstrates a deficit in long term retrieval, she/he may have difficulty with tasks that require use of information that has been learned previously. For example, in reading, the student may have trouble remembering the sounds made by letters; in spelling, the student may be unable to remember or apply spelling rules; and in math, the student may have difficulty memorizing the times tables.

Deficits in memory are usually related to the type of memory process involved. The two major types of memory processes are auditory-verbal memory and visual memory. Students may have problems with one or both of these processes.

### Long Term Auditory Verbal Memory

**A student** with a deficit in auditory-verbal long term memory may have difficulty remembering information learned in words: e.g., instructions, lectures and/or reading. Information of particular difficulty may include lists of facts and rules such as those in grammar, spelling, chemistry, physics and biology.

**Functional Manifestations (cont.)**

In daily life these students may have problems remembering schedules or appointments, instructions from parents, and instructions from physicians or other professionals. They may also forget when prescriptions need to be refilled or how a joke was told.

### Long Term Visual Memory

A student with long term visual memory deficits may have difficulty with mathematical tables, geometric figures and/or algebraic formulas. Spelling may be difficult if the student spells primarily by remembering the shape of a word rather than its sound. In addition, this student may have difficulty memorizing geographical information, charts and graphs, schematics, sign languages, and movement sequences (e.g. dance and martial arts).

In daily life this student may have difficulty remembering landmarks and therefore easily become lost. The student may have difficulty remembering information from maps unless translated into verbal directions, and may also have difficulty following directions for construction or repair of items if these directions are based upon schematic drawings.

**Software Considerations**

### Instructional Goal

Students will apply memory strategies in a variety of contexts to improve information storage and delayed information retrieval.

### Instructional Considerations

It is likely that memory will *not* improve solely on the basis of software work. Memory scores may improve if the student is made familiar with a number of strategies which will assist in information storage and retrieval. Examples of memory strategies are: picturing, personalizing and organizing material. Most software programs do not teach specific memory strategies, but instead provide a forum for practicing learned strategies. The instructor should make clear how the memory strategies being practiced can apply to everyday life.

## Software Characteristics

Feedback should be educational.

Frequent on screen scoring allows students to learn from their responses. There should be an opportunity to try a task more than once with minimal penalty. Cues should be provided if responses are repeatedly inaccurate. Students should be able to determine their most effective learning modality by comparing scores on a variety of tasks. The software should accept close approximations of spelling where accuracy is not essential.

Software tasks must provide practice with a limited number of easily defined strategies.

Practice with a limited number of strategies enables a student with memory problems to clearly understand the nature of the strategies being developed and used.

Tasks should be presented in order of increasing complexity.

It is critical for students with memory problems to begin developing memory strategies at a simple level before moving to more complex levels. Tasks of increasing complexity provide motivation and an opportunity to self-monitor for effective application of the strategy being practiced. In this way mastery of a particular memory strategy may be achieved.

Format should be motivating.

Memorization can be boring. Computer graphics, auditory and visual reinforcers, or a game format provide motivation for continued practice.

Reading and spelling tasks should be matched to the student's abilities.

Students should be able to attribute their scores to memory practice only. Errors in reading or spelling confuse and frustrate students and are unrelated to the memory task itself.

**Software Considerations (cont.)**

An authoring component should be available when appropriate.

Authoring components which allow students to develop visual memory aids (e.g., flash cards, lists, outlines for academic coursework) are particularly useful. Learning has a greater chance of occurring when activities can be applied in real life situations.

Potential for distraction from the task should be provided.

Distraction is a primary hindrance to the ability to memorize successfully. Software-generated distractions provide the opportunity for students to learn how to overcome this problem.

**Suggested Software**

**Memory Castle (Sunburst/Wings for Learning) - DOS**

Students play a fantasy game requiring sequential memorization of instructions. This software is particularly good for practicing the following memory strategies: visualization, mnemonic systems, and personalization. Tasks of increasing complexity are presented and the format is motivating.

**Memory Building Blocks (Sunburst/Wings for Learning) - DOS/MAC**

This program builds visual and auditory memory. Students practice memory strategies to recall tunes, words, shapes, patterns and objects. The software is educational and relevant to memory class curriculum. Tasks of increasing complexity are presented and format is motivating. Authoring and potential for distraction are provided.

**Foundations II Memory (Psychological Software) - DOS**

A variety of learning tasks are presented. Students must practice memory strategies for visualization and information organization. The software is relevant to memory class curriculum. Tasks of increasing complexity are presented, and potential for distraction is provided.

**Cognitive Rehabilitation: Memory (Hartley) DOS**

This program presents a simple format for practicing recall of increasingly complex verbal tasks. The program's capacity to present distracters for tasks is a special strength. Authoring is also available.

**Word Attack Plus!, Spell it Plus!, Math Blaster Plus! (Davidson) - DOS/MAC**

These programs are useful for memorization of basic academic material such as vocabulary and mathematical operations. The software is educational and motivating. An authoring component is provided which allows for input of student coursework.

# Short Term Memory

**Assessment Measures**

Short term memory involves comprehension and use of information within a short period of time. It is often called working memory.

The following tests of the WJ-R measure short term memory:

**r=1** ***Memory for Sentences [test 21***

This test measures the student's ability to recall sentences subsequent to auditory presentation.

❑ ***Memory for Words [test*** *91*

This test measures the student's ability to recite lists of unrelated words in exact sequence.

The following subtest of the WAIS-R measures short term **memory:**

❑ ***Digit Span [subtest 31***

This subtest measures the student's ability to recall sequences of numbers presented auditorily.

**Functional Manifestations**

A student with a deficit in short term memory (active working memory) will have difficulty holding on to information for a long enough time to manipulate it mentally. Thus, she/he may be unable to relate it to other information in an on-going situation. An example of this deficit might be the following: during a lecture, when an instructor states a key principle and then proceeds to give an illustrative example, the student with a short term memory deficit may lose track of the principle while listening to the example. The same thing may happen for students when reading, doing mathematical calculations, or following directions.

**Software Considerations**

**Instructional Goal**

Students will apply strategies for recalling and using information within a brief span of time.

**Instructional Considerations**

Deficits of short term memory may be, in fact, deficits of what is commonly called "focus." Students must be aware of whether or not they are attending to the task. (i.e. "Am I here?") This concept of short term memory incorporates "active working memory" which, as defined by Sohlberg and Mateer, is that form of memory at work "when there is some requirement to analyze or mentally manipulate the material" and where, "no permanent storage is postulated" (p. 137).

**Software Characteristics**

Format should be motivating.

The task of this software is to train students to attend to multiple stimuli and/or stimuli which increases in complexity and length. Because this type of memory practice can be boring, it is important that software provide visual or auditory reinforcement to motivate students to continue practicing. Game formats are often the most successful in generating motivation, but the student must be taught to apply the skills she/he is learning to every day activities in and out of school.

Software should require mastery before student can advance to a higher level.

Confusion and frustration will result if a student advances before she/he has mastered the current memorization task. Often the instructor must monitor students to be sure that this software is being used properly.

Software should provide a variety of activities.

By working in a variety of activities, a student can monitor the ways in which her/his mind functions in the context of these different activities. More importantly, these activities provide the student with experiences which reveal how her/his particular mind works. Some tasks will be easier than others depending upon the individual student. Software scores can be used as tools to illustrate a student's learning strengths and weaknesses.

**Software Considerations (cont.)**

Software should provide frequent feedback.

Short segments with feedback provided allow the student to take in the information they are learning about themselves more effectively. If a task is too long or complex this benefit will be compromised by frustration due to repeated errors.

Reading and spelling tasks should be matched to the student's abilities.

Students should be able to attribute their scores to memory practice alone. Errors in reading or spelling contaminate information the student needs to learn about efforts to improve short term memory.

**Suggested Software**

**Captains Log: Attention Skills & Visual Motor Skills Modules (Brain Train) - DOS**

This program's clear graphics and design make it adaptable for teaching a variety of attention and memory skills. Format is motivating, a variety of activities are presented, and frequent feedback is provided. This program is not reading- or **spelling-based.**

**Memory Building Blocks (Sunburst/Wings for Learning) - DOS/MAC**

This program provides exercises which illustrate the relationship between attention and memory. This software provides motivating format, a variety of activities, and frequent feedback. Minimal spelling skills are required.

**Foundations II Memory (Psychological Software) - DOS**

This program provides students with practice in a variety of exercises which are designed to increase attention span. The activities are especially designed to generate minimal frustration. Additionally, the software provides a motivating format, a variety of activities, and frequent feedback, and is not reading- or spelling-based.

# Processing Speed

Assessment Measures

Processing speed measures the ability to perform simple, relatively automatic, visual-motor tasks and maintain attention under timed conditions.

The following tests of the WJ-R measure processing speed:

- ❑ *Visual Matching [test 3]*

This test measures the student's ability to demonstrate visual discrimination by circling pairs of identical numbers in a series under timed conditions.

- ❑ *Cross Out [test 10]*

This test measures the student's ability to make quick comparisons of visual symbols.

The following subtest of the WAIS-R measures processing speed:

- ❑ *Digit Symbol [subtest 10]*

This subtest measures the student's ability to reproduce symbols associated with numerals under timed conditions.

**Functional Manifestations**

A student whose test behavior suggests specific processing speed deficits may have difficulty understanding lengthy directions or lectures, completing reading or written assignments in a timely fashion, and completing any tests or assignments under timed conditions, especially those involving extensive retrieval or organization of information. Unless concentration and memory skills are particularly strong, processing speed deficits may also impact negatively on other academic skills which exceed this student's duration of concentration and memory capabilities, e.g., algebraic calculations, computer programming and even tests or assignments which are not timed.

In daily life, depending on the severity of the processing speed deficit, there may be problems in taking phone messages, understanding news on the radio, driving skills and any tasks involving rapid hand-eye coordination (e.g. sports, video games).

It may be necessary to use compensatory strategies (e.g. audio taping for note taking) for functional academic purposes.

**Software Considerations**

## Instructional Goal

Students will increase comprehension speed and reaction time while responding to a variety of information.

## Instructional Considerations

It is imperative that students enjoy and see the purpose of, tasks developed to improve processing speed. Additionally, although students may want to advance to higher levels of difficulty before they are ready, it is important that they remain at baseline levels until they achieve "automaticity." It is especially important for art instructor to monitor students working on this type of task.

## Software Characteristics

A wide range of speed levels should be available so that students can work on content at or near ability levels.

Software for processing speed should offer a wide range of speed levels in order to allow success for slower students and challenges for higher functioning students. Content difficulty should be within or near students' abilities so the task focus is primarily on increasing the speed of accurate responses (and not on error responses which result from poor reading skills). Software with an open-entry structure for task selection allows students to begin at or near the speed level they find challenging.

Response process should reflect rapid processing of information.

The response process should reflect that the student has processed the information, and processed it accurately. Students should not be penalized for a slow keyboard entry rate. If the software objective is reading more quickly, speed and accuracy of the response (e.g., keyboard entry of word(s) that were read) should not be an issue.

Software should include a timing component.

A timing component should monitor students' speed of task completion and/or challenge them to work faster. It can do this in at least four ways:

- presenting visual stimuli for a set duration;
- discontinuing tasks when a set duration for responding has been exceeded;
- documenting response time as feedback; or
- providing a "chase" environment to motivate the student to complete the task before negative consequences occur.

**Suggested Software**

**Speed Reader (Davidson) - DOS/MAC**

The warm-up portions (letters or words) of this program are particularly useful because speed of presentation automatically increases following accurate responses and decreases following inaccurate responses. A wide variety of-reading levels is available.

Tetris/Welltris (Spectrum Holobyte) - DOS

These programs are particularly useful in motivating students to (1) rapidly process visual information and (2) plan reactions to material which increases in speed. Initial speed levels can be selected so that **students can begin at their own levels.**

**NumberMunchers (MECC) - DOS/MAC**

This program is particularly effective in speeding the processing of basic mathematical information. It is not difficult to select content or control the level of difficulty. The response mode is simple and incorporates good feedback.

WordMunchers (MECC) - DOS/MAC

This program is particularly useful in speeding processing of phonetic decoding of vowels. It is easy to select target vowel ' sounds and word difficulty. As above, the response mode is simple and incorporates good feedback.

# Visual Processing/ Perceptual Organization

**Assessment Measures**

Visual processing/perceptual organization measures visual perception of patterns, spatial relations, and attention to visual details.

The following tests of the WJ-R measure visual processing/ perceptual **organization:**

❑ ***Visual Closure [test 51***

This test measures the student's ability to identify objects from pictures that are presented with missing parts, distortions, or superimposed patterns.

❑ ***Picture Recognition [test*** *121*

This test measures the student's ability to use immediate recall to recognize a previously presented object from among a group of similar objects.

The following subtests of the WAIS-R **measure visual processing/perceptual organization:**

❑ ***Picture Completion [subtest 21***

This subtest measures the student's ability to recognize important missing visual details **from pictures.**

❑ ***Block Design (subtest 61***

This subtest measures the student's ability to manipulate blocks to reproduce a visually presented pattern under timed conditions.

❑ *Object Assembly (subtest 81*

This subtest measures the student's ability to manipulate puzzle parts and synthesize them into a unified whole under timed conditions without a visual stimulus.

**Functional Manifestations**

A student with a deficit in visual processing/perceptual organization may have difficulty with reading, writing, and mathematics due to inaccurate processing of the shapes of letters and numbers. Such a student may also have difficulty with geometry or with reading and constructing graphs, charts, diagrams, maps and tables.

In daily life these students may have difficulty in activities which rely heavily on visual processing: e.g., using reference materials such as the yellow pages in a phone book. It is probable that they will not enjoy putting together models or puzzles, following patterns, or doing art projects which require visual-spatial awareness and ability.

**Software Considerations**

Instructional Goals

Practice strategies to improve organization of visual data leading to a product.

Practice strategies to improve discrimination of increasingly subtle variations in visual sequences, spatial relationships among objects, and orientation of objects.

**Instructional Considerations**

Software provides the opportunity for improvement of visual perceptual skills as well as cognitive mediation of (thinking about) visual perceptual tasks when the solution is not readily perceived.

These software goals combine strengthening visual perceptual skills and thoughtful, efficient problem solving.

When concentrating on academic tasks (e.g. writing using a word processor) students can take advantage of strategies to compensate for visual perceptual weaknesses. These strategies include adjusting screen colors, adjusting text font, adjusting text size, adjusting format of work on the monitor, enlarging the cursor, using copy holders with line guides, and using on-line reference and personal management tools.

**Software Considerations (cont.)**

**Software Characteristics**

The software text and graphics must be easily perceived.

The monitor must have clear resolution (e.g. smooth characters, no bleeding colors, no bouncing graphics, no obvious flicker) so the quality of the images will not interfere with perception of the material.

There should be clear, minimal on-screen directions.

Students should not be distracted from visual perceptual tasks by confusing or difficult to read directions.

The software should provide carefully sequenced activities.

It is especially important that software activities be sequenced to help students avoid sensory overload and confusion, maintain their motivation, and provide enough challenges to stretch their skills.

Responses should reflect decisions regarding organization or discrimination of visual perceptual data.

Success with the software must depend on using visual **perceptual skills.**

**Suggested Software**

**Factory (Sunburst/Wings for Learning) - DOS/MAC**

This program is especially useful because of its clear, brief instructions written at a low reading level. Additionally, it provides opportunity for unlimited practice with exploratory activities before beginning Factory games. It provides user-control over choice and complexity of activities chosen. The documentation includes worksheets which clarify and facilitate the tasks. Supplementary worksheets offer additional activities.

**Print Shop and Print Shop Deluxe (Broderbund) - DOS/ MAC/WINDOWS**

These programs are useful because they provide students with the opportunity to exercise visual perceptual skills in

preparing a usable product (greeting card, sign, banner, stationery, calendar). While working to complete their projects, students have many experiences exploring, choosing, evaluating and editing the relationships among visual design elements. Because of its consistent format and layout, this program also reinforces generalization skills.

**The Super Factory (Sunburst/Wings for Learning) - DOS**

This software allows the student to develop and practice strategies for 3-dimensional manipulation of a cube. Although some students may initially need additional support from the instructor in order to understand the task, the graphics and on-screen controls are clear. The student has the option of controlling the block manipulation process; this is useful when a student is first learning to use the program. Later, this option can be used as a strategy development tool.

**The Right Turn (Sunburst/Wings for Learning) - DOS**

This software allows the student to develop and practice strategies for visual manipulation of a 3X3 grid. Graphics and instructions are basic and clear.

# Comprehension-Knowledge/ Verbal Comprehension/ Expression

**Assessment Measures**

Comprehension-knowledge/verbal comprehension measures expressive language ability based on the breadth and depth of cultural knowledge and experience. It includes not only the comprehension of communication but also the types of reasoning based on previously learned operations.

The following tests of the WJ-R measure comprehension-knowledge/verbal comprehension:

❑ *Picture Vocabulary (test 61*

This test measures the student's ability to identify pictured **objects.**

❑ ***Oral Vocabulary (test 131***

This test measures the student's ability to provide synonyms and antonyms for a list of presented words.

❑ ***Listening Comprehension (test*** *201*

This test measures the student's ability to understand vocabulary, meaning, levels of construction, and use of word forms with items presented from audio tape. Although this test was not included in the LD Model Development Study, it is valuable because it measures all levels of language processing from basic auditory processing to a complex grasp of syntax and semantics.

The following subtests of the WAIS-R measure comprehension-knowledge/verbal comprehension:

1:3 ***Information (subtest*** *11*

This subtest measures the student's ability to provide verbal responses to questions of general knowledge.

❑ *Vocabulary [subtest 51*

This subtest measures the student's ability to provide concise definitions for a list of presented words.

❑ ***Comprehension [subtest** 91*

This subtest measures the student's ability to respond to oral questions pertaining to everyday.social situations and cause and effect relationships.

❑ *Similarities (subtest 111*

This subtest measures the student's ability to utilize abstract verbal reasoning to identify the general classification for pairs of related items.

❑ ***Picture Arrangement [subtest 41***

This subtest measures the student's ability to put in meaningful sequential order a series of picture story cards by using visual context clues.

**Note:**

Because this area of assessment is so broad, descriptions of functional behaviors and software considerations are broken down into two basic areas,

1. Vocabulary, and
2. Verbal (listening) comprehension

**Functional Manifestations**
Vocabulary

Students with vocabulary deficits will have difficulty understanding lectures or complicated verbal directions because they do not remember what certain words mean. Vocabulary deficits are particularly problematic for students if no visual information is provided to support the material. Difficulties will also be noticed in reading comprehension, although they may be less severe in this context because words remain on a page and contextual analysis can occur.

## Instructional Goal

Students will increase written vocabulary at the single word level and categorize relationships among words.

## Instructional Considerations

It should be noted that tests used to measure these skills require a verbal/oral response, while most computer software requires a written or motor response.

## Software Characteristics

Objectives and content should be clearly organized.

Objectives for the development of vocabulary and word relationships should be functional and clearly stated. Whether by grade-level, by part of speech, or as survival vocabulary, its organization should be in agreement with the instructional objectives for these students.

Definitions should be clear and within students' reading abilities.

Content for vocabulary/word relationship tasks should offer a wide range of reading/spelling levels with instructions and definitions clearly within students' reading levels. The content of definitions is easily susceptible to cultural biases and should be reviewed with students. It is suggested that new word lists be limited to no more than 20 per set. After mastery of each set, some integration of word sets may be helpful in generalization. An open-entry process allows students to begin at or near a challenging level.

Format should be interactive, with a variety of drill activities available.

Format is crucial in vocabulary development. An interactive instructional format for initial learning of new vocabulary or word relationships (as opposed to the display-only format of many programs) is beneficial prior to drill formats. A variety of activities (e.g. multiple choice, matching, sentence completion) not only accommodates

different learning styles, but also facilitates generalization of word knowledge. Because many programs are drill-based, a motivating format assisted by appropriate graphics, is helpful.

Response processes should reflect knowledge of word meanings or relationships.

Opportunities for choice responses and single word entry responses should be available, but unless instructional objectives stress accurate spelling, the program should provide some assistance and/or accept a range of spelling accuracy in responses. When responses are inaccurate, the correct answer should be displayed.

Authoring component should be easy to use.

Entry of material relevant to students' current needs is the most functional use of these programs.

Spoken output **is desirable.**

The dual input of visual and spoken word production not only accommodates both auditory and verbal learners, it also assists in generalization of new vocabulary into spoken **language.**

**Suggested Software**
**Vocabulary**

**Word Attack Plus (Davidson) - DOS/MAC**

This program, which now includes spoken production of its vocabulary, has an array of formats, is organized by grade level and part of speech, and has an authoring capability.

**Spell-It Plus (Davidson) - DOS/MAC**

This program is useful because of its array of formats, its organization by spelling rules, and its authoring capability.

**Cognitive Rehabilitation (Hartley) - DOS**

The Association, Categorization, and Sequencing programs in this series are particularly useful in their development of word relationships, and in their authoring capabilities.

**Suggested Software**
**Vocabulary (cont.)**

**Synonyms/Antonyms/Analogies** (Hartley) - **DOS**

These programs are particularly useful in their development of more complex word relationships, and their authoring capabilities.

**Functional Manifestations**
**Verbal (Listening) Comprehension**

A student with verbal comprehension deficits will have difficulty understanding verbal information when listening. Verbal comprehension deficits can interfere with student success when it is necessary to listen to lectures, verbal directions or social conversations. These deficits may be due to poor vocabulary, inability to understand complex grammatical structures or limited background experience. Short term memory deficits may also limit verbal comprehension. If the student is unable to hold multiple chunks of information in memory long enough to relate them to new information being received, then that student will not understand the concept being discussed. Therefore, student questions and comments may not be to the point or may show evidence of wrong assumptions.

**Software Considerations**
**Verbal (Listening) Comprehension**

**Instructional Goal**

Students will demonstrate comprehension of increasingly complex verbal language concepts. Materials need to increase in length and complexity from single word to extended paragraph.

**Instructional Considerations**

Currently, there is no commercially available computer-assisted instruction that addresses verbal comprehension in the context of understanding what people say (i.e. lectures, directions, conversations).

Some software in CD-ROM format provides activities which combine a visual and auditory stimulus of words as text is being read.

Skills may need to be addressed through reading rather than auditory comprehension. Having students read information aloud in small groups will translate reading tasks into auditory-verbal comprehension tasks. As content increases in

length, students will need to utilize strategies to assist short and long-term memory in order to organize and retain information.

**Software Characteristics**

Software content should reflect differing levels and types of complexity.

Material can increase in difficulty in many ways: in length, in grammatical complexity, and in the abstractness of its ideas. The software should effectively organize difficulty levels acknowledging these parameters.

Software content should be free from cultural bias.

Because grammatical structures and abstract ideas are easily susceptible to cultural biases, content should be reviewed with students before use.

Response processes should reflect comprehension.

If keyboard entry is required for response, students should not be penalize for spelling errors.

Feedback should be educational.

Opportunity for repeated attempts at correct answers is important in this area, as is identification and explanation of accurate responses. Ideally, material relevant to the correct answer should be highlighted (perhaps as cues), and there should be feedback to explain why inaccurate responses are in error.

Content should require association of ideas.

Tasks should require students to determine main ideas, make inference, and/or draw conclusions.

Program content should be suitable for class discussion on the use of strategies for organization of material.

Extended verbal information needs to be organized in order to facilitate comprehension and retention. Strategies for organizing the material received can be reviewed before the task, as part of the task, and /or after the task.

**Suggested Software**
**Verbal (Listening) Comprehension**

**Ace Series - Mindplay - DOS**

This series is particularly useful because of the organization and design of each program. Each program focuses on one concept (identifying main idea and facts, sequencing events, drawing conclusions, and separating fact from opinion). Each program also requires students to separate pertinent from non-essential information, and has a motivating format. These programs are useful for small group activities.

**Carmen Sandiego Series (Broderbund) - DOS/MAC**

These programs are particularly effective in facilitating generalization of vocabulary development, forcing students to make abstractions from prior knowledge bases, and in facilitating students' development of organizational strategies. Additionally, the game format is motivating. The programs also facilitate collaborative learning because they can be used in small group settings.

**Decisions, Decisions - Tom Snyder - DOS/MAC**

This software requires theme analysis and is particularly good for team play and reading aloud. It may be used to teach students how to organize and evaluate advice. This software requires teacher facilitation.

**Tell-Tale Heart - Discis Books - CD-ROM for DOS/ WINDOWS/MAC**

This disk-based version of the Poe classic comes with extensive auditory material: pronunciation of words, syllabication, definitions, and parts of speech for words. It also provides an option for having the story read from two different perspectives and an option to place comprehension questions opposite the page currently being read. Some comprehension questions are accompanied by an auditory answer which can serve as a verbal model for students.

# Fluid and Abstract Reasoning

**Assessment Measures**

Fluid reasoning measures the student's ability to draw inferences and make applications from controlled learning tasks. It represents the highest level of reasoning skills involving inferential and qualitative thinking.

The following tests of the WJ-R measure fluid **reasoning:**

***O Analysis! Synthesis (test*** **71**

This test measures the student's ability to use learning, reasoning, and generalizing skills in solving logic puzzles.

C3 ***Concept Formation (test*** *141*

This test measures the student's ability to utilize nonverbal problem solving strategies and categorical reasoning.

The following subtests of the WAIS-R measure abstract reasoning:

CI ***Arithmetic (subtest*** *71*

This subtest measures the student's ability to use mathematical reasoning to solve math word **problems mentally.•**

❑ ***Similarities (subtest 111***

This subtest measures the student's ability to utilize abstract verbal reasoning to identify the general classification for pairs of related items.

**Functional Manifestations**

A student with deficits in the areas of fluid and abstract reasoning may have difficulty organizing and classifying ideas or seeing implications for the broader application of learned rules. For example, this student may memorize the steps of meiotic cell division in basic biology but may not see how that knowledge applies to understanding the transmission of genetic traits to one's own offspring. The same deficit would make it difficult to understand symbolic representations, interpret characterization in literature, or apply principles learned in sociology or anthropology to daily life. Such students may also have difficulty seeing relationships which govern sequencing tasks, especially when multiple associations are involved or may find it difficult to solve problems which require two or more steps to solution.

**Software Considerations**

## Instructional Goal

Students will practice the skills of inference, sequence, logic, rule-formation (classification), and organization of complex information leading to improved problem-solving skills. Students will learn to evaluate results and develop new solutions as necessary.

## Instructional Considerations

Improvements in abstract reasoning require a combination of teacher support and independent student work on software. Teacher support might take the form of organizing students into teams, providing focus for an activity, or demonstrating organizational strategies.

It is essential that students be made aware of the types of reasoning and organization options appropriate to the problems that they are solving. Examples of problem-solving strategies are working backwards, making a prioritized list, stating the problem as a question, and developing a table or chart.

Students with language-based learning disabilities often discover that visual-spatial software programs like Factory and Safari Search are easier for them than are more verbally "loaded" programs such as the Carmen Sandiego series. Such a realization may help a student understand more clearly the nature of his/her disability.

## Software Characteristics

Software should have clear instructions.

Although it may seem redundant to list this elementary software atttribute, clarity of instructions is of paramount importance for students with reasoning problems. Additionally, the goal(s) of the program must also be clearly stated.

Software scores should be clear and accessible.

Students will often stray off task with complicated or lengthy programs. Therefore, interim scores or scoring in short segments allows them to correct for errors and have more success in finding solutions.

Software should have a motivating format.

Appropriate feedback will encourage students to continue working on tasks. Age-appropriate and/or contemporary themes are essential to full student participation.

Software should encourage teamwork.

Many students learn best when teaching someone else. Software which permits students to work in teams generates a good learning environment. Team members learn from one another and new solutions emerge from the group which might not have been obvious to an individual working alone.

Success with software requires organization of information.

A primary purpose of this type of software is to teach inference and complex problem solving. Success should require the student to develop and employ a variety of information management strategies. Examples of information management strategies are note taking in the form of a list, table, chart, or solution matrix.

Success with software should require analysis of information.

Students should not be able to "win" by guessing or by trial and error. They should understand exactly how they arrived at a conclusion and why the conclusion is the correct **one.**

**Suggested Software**

**Where in the World is Carmen Sandiego? (Broderbund) - DOS/ MAC**

This software provides clear instructions and scoring, has a motivating format, and encourages team play. It also requires organization and analysis of information.

Safari Search (Sunburst/Wings for Learning) - MAC

This software stimulates non-verbal abstract reasoning. It is particularly good at helping students learn to differentiate between inference and guessing. It provides clear instructions and scoring, has a motivating format, and encourages team play. It requires organization and analysis of information.

**Suggested Software (cont.)**

**Factory (Sunburst/Wings for Learning) - DOS/MAC**

This software stimulates non-verbal reasoning. It is also effective in teaching sequential reasoning in the visual mode: Factory provides clear instruction and scoring, has a motivating format, and encourages team play. It requires organization and analysis of information.

**Decisions Decisions: Television (Tom Snyder) - DOS/MAC**

This software requires theme analysis and is particularly good for team play. It may be used to teach students how to organize and evaluate advice. This software requires instructor-facilitation.

**Lost Tribe (Lawrence Productions/Davidson) - DOS/MAC**

This program is useful in providing a high interest format for making decisions, solving problems or estimating needs, and testing hypotheses. Students need to use reading skills as well as knowledge of mathematics, time, and human nature in order to be successful in this game/adventure format.

# Freedom From Distractibility

**Assessment Measures**

Freedom from distractibility measures the ability to focus attention, concentrate, and resist distraction.

None of the tests of the WJ-R are specifically designed to measure freedom from distractibility; however, the examiner may use behavioral observations.

The following subtests of the WAIS-R measure freedom from distractibility:

**ID** ***Digit Span [subtest***

**This** subtest measures the student's ability to recall sequences of numbers presented auditorily.

***Arithmetic (subtest***

**This** subtest measures the student's ability to use mathematical reasoning to solve math word problems mentally under timed conditions.

**Functional Manifestations**

This student may have difficulty focusing attention on a task when mental or physical distractions are present. Such students will find it very difficult to work if they are preoccupied with their thoughts or if there is something going on in their environment which competes for their attention. This behavior may be accompanied by hyperactivity although it is not always the case.

In school these students have difficulty attending to a lecture where there are environmental distractions. Participating in a laboratory situation where many things are happening at the same time may be difficult. They may also find it difficult to apply themselves to school work for a long enough period of time to complete assignments well.

In daily life these students may often be late and seem to be disorganized, inconsistent or unreliable. They may become very frustrated and tired due to the effort required to focus their attention.

**Software Considerations**

## Instructional Goal

Students will increase sustained mental focus to a stimulus or series of stimuli, and increase the duration of that mental focus.

## Instructional Considerations

When working to remediate this area, instructors may need to consider ways of initially isolating the student from outside distractions, e.g., facing students away from movement or activity.

Some students may benefit from listening to soft music from "Walkman"-style headphones. Techniques to insulate students from distractions should be gradually removed before increasing difficulty levels in software programs.

These techniques can also be considered when compensating for distractibility while working in other types of software **programs.**

## Software Characteristics

Content difficulty should not interfere with task objectives.

For freedom from distractibility, it is important that content difficulty be at a level where students are currently successful. In this way students are not bored by easy content and can focus on inhibiting reactions to extraneous events, rather than on difficult content.

Parameters for duration of focus should be controllable.

Task duration should be set to appropriate levels for each student, or the task process should be designed so that it ends when the student is distracted.

Distraction from the task should be detrimental to students' score or negatively impact their performance on the task.

The motivation or "challenge" to students is usually to maximize performance on a task with content they perceive as within their grasp. In these cases the negative impact of

their distractibility serves to motivate them to focus more consistently. These students are often motivated to improve their scores if an onscreen display of best scores is included with the program.

**Suggested Software**

**NumberMunchers (MECC) - DOS/MAC**

This program is particularly useful in motivating students to focus on the basic mathematical problems. It is necessary to solve problems in order to avoid being devoured by small creatures. Content and level of difficulty are easily controlled.

**WordMunchers (MECC) - DOS/MAC**

This program is particularly useful in motivating students to focus on the words being decoded (in order to avoid being devoured by creatures). Vowel sounds selected and word difficulty are easily controlled.

**Tetris/Welltris (Spectrum Holobyte) - DOS/MAC**

These programs are particularly useful in motivating students to focus on the visual stimuli.

**Foundations II (Psychological Software) - DOS**

Most of the subtests of this program have deterrents for distraction in timing or in task accuracy.

**Captain's Log (Brain Train) - DOS**

The Attention Module and Visual-Motor Module of this program are particularly useful in motivating students to focus on the visual stimuli.

# Achievement Deficits

# Basic Reading Skills

**Assessment Measures**

The following tests provide information about basic reading **skills:**

- ***Letter-Word Identification [WJ-R test 22]***

This test measures the student's ability to identify letters and words. A low score on this test suggests a lack of reading vocabulary.

- ***Word Attack (WJ-R test 31]***

This test measures the student's ability to demonstrate the knowledge of phonetic analysis by decoding nonsense words. A low score on this test suggests a lack of phonics and syllabication **skills.**

- ***WRAT-R Reading***

This test measures the student's ability to read a list of words of increasing difficulty. A low score on this test suggests a lack of reading vocabulary.

**Functional Manifestations**

## Basic Reading Skills

A student whose test behavior suggests specific deficits in basic reading skills may have difficulties even in classes where reading ability is not a target skill. Written instructions on tests or worksheets, assignments written on the board, the class syllabus, and word problems in classes such as math, drafting or electronics may present unexpected difficulties for this student. In addition, instructional signs on equipment in classrooms which relate to use or warn of danger may not be comprehended by this student.

In daily life, this student can expect problems with menus, billboards, street signs, warning signs, identifying product names in stores, reading maps, and finding names in phone books, as well as the more obvious reading situations involving mail, instructions with products, driving tests, and contracts.

**Software Considerations**

## Instructional Goal

Students will expand sight reading recognition vocabulary as well as practice word recognition strategies which include phonetic word attack, using context clues, and recognition of word parts (e.g. roots, prefixes, suffixes).

## Instructional Considerations

Functional visual scanning skills are essential to the reading process and should be addressed early in instruction. Mastery of a given activity must be achieved without sound output before student progresses to the next level.

To improve academic performance, students can use technology to compensate for weaknesses in sight recognition and word attack skills. Such technology includes computer voice output for auditory text editing, books on tape, and "talking" hand-held spellers/dictionaries.

Any program format which engages students to read at their instructional level will stimulate use of word recognition strategies. The same software may be useful for building word identification skills as well as vocabulary.

## Software Characteristics

Software should provide multiple formats for practice.

Having different formats for practice relieves tedium and facilitates generalization.

Authoring component is easy to use.

Having the opportunity to practice personally relevant words enhances/expands the value of the software. Creating personalized reading materials is not practical unless the authoring tool is easy to use.

Software should provide multiple reading levels.

Easily identified reading levels allow an appropriate match between practice material and student's reading level.

Sound output is desirable.

With sound output students can hear if they have successfully visually decoded a target word. The option to have a word highlighted as it is read is a useful software attribute.

**Suggested Software**

**Word Attack Plus (Davidson) - DOS/MAC**

This program is useful because of the wide range of data disks available which cover various grade levels and specific content areas (roots and prefixes, SAT vocabulary).

**Skills Bank H (Skills Bank Corporation) - DOS/MAC**

A strength of this program is that its vocabulary building lessons are organized into word parts (including Greek and Latin roots as well as categories of prefixes and suffixes). In the DOS version, students can make print screens of word categories to use for later **study and review.**

**WordMunchers (MECC) - DOS/MAC**

This program encourages rapid decoding of vowel sounds at the single syllable word level.

# Reading Comprehension

**Assessment Measures**

The following tests provide information about reading comprehension:

- ***Passage Comprehension*** ***test*** 231

This test measures the student's ability to use context clues to determine the appropriate word in a doze reading passage. A low score on this test suggests that a student will probably experience difficulty **in reading college textbooks.**

- ***Reading Vocabulary IWJ-R test 321***

**This test** measures the student's knowledge of word meanings by supplying synonyms and antonyms.

Since college reading materials assume a level of sophistication in word knowledge, a student with a low score on this test will likely experience problems in understanding lecture content and in comprehending course materials.

- ***Degrees*** *of* ***Reading Power (DRP)***

This test measures the student's ability to choose the correct words, in a doze procedure, to complete the meaning of reading passages with increasing complexity as in the Passage Comprehension test, a low score on this measure suggests that a student will experience difficulty in deriving meaning from written materials.

Weakness in any of the reading comprehension skills may adversely affect a student's school performance.

**Functional Manifestations**

**Reading Comprehension**

A student whose test behavior suggests specific deficits in reading comprehension may have difficulty in identifying main ideas, retaining sequences of events, and/or comprehending subtleties (inferences) in written material. The student may attempt classes which involve reading, but may interpret information literally, without drawing conclusions or forming opinions.

In daily life this student is not likely to enjoy recreational reading, and, if interested in current events, is unlikely to obtain this information from newspapers or magazines. In addition, this student may have difficulties in reading situations involving driving tests, mail, instructions with products, and contracts..

**Software Considerations**

**Instructional Goal**

Students will improve passage comprehension by practicing strategies to enhance visualization, identification of the main idea, inferential reasoning, memory for details, and drawing conclusions. Students will use reading skills to obtain information needed to solve problems.

Students will improve vocabulary skills by studying new words and by using contextual clues to deduce meaning of unknown words.

**Instructional Considerations**

It should be noted that most reading comprehension software tests comprehension rather than teaching strategies. Students need to learn reading comprehension strategies before using the software to practice them.

Games and problem-solving software environments motivate students to work to understand information that they are reading. In this way, application and generalization of reading comprehension skills occurs "painlessly."

Long-term and short-term memor$^{Y}$ deficits may interfere with reading comprehension and should be addressed specifically. The instructor should also be aware that success in reading comprehension is dependent upon a student's understanding the vocabulary in the material being read.

Even when using an appropriate reading level, the use of voice output devices (e.g. hand-held electronic dictionary/speller, or computer voice output, if compatible with software package) will help students compensate for word attack weaknesses.

## Software Considerations (cont.)

There are a number of full-featured programs which teach reading from the pre-literacy level through the high school level. Because such programs are costly, they are most effectively purchased by an institution for campus-wide use. Programs of this type are not included in this document.

**Note:**

Software characteristics and suggested software programs for reading comprehension activities are divided into three basic types:

1. reading comprehension skills only (i.e., main idea, inference, drawing conclusions);
2. vocabulary development; and
3. reading comprehension to achieve software goal (games or simulations).

## Software Characteristics

### Reading Comprehension

Control of reading level and passage length is desirable.

It is necessary to control passage length in order to ensure student success in decoding material. Text should be presented at or below students' reading levels for this to occur. Material of varied lengths need to be available in order to accommodate time constraints of students (e.g., a 50 minute class period), students' ability to focus and maintain attention on the reading task, and students' level of performance. Short passages must also be available for students unable to comprehend longer ones.

The ability to receive on-line hints or to review the reading passage while answering comprehension questions is desirable.

Many students' ability to mentally organize and retain the material they have read is facilitated by hints or being able to review the passage while they consider the answers to comprehension questions.

Software should employ a variety of response modes.

To make tasks more interesting as well as challenging, a variety of response modes is desirable (e.g. multiple choice responses for comprehension questions, underlining for selecting the main idea in text). Because students get bored with repetitive tasks, being forced to respond in different modes promotes different ways of processing information and formulating concepts.

Software should allow students to demonstrate comprehension without regard for spelling accuracy or an exact sequence of words.

Programs which require exact spelling and phrasing may measure areas of weakness rather than focusing on the task of reading comprehension. The option to review vocabulary prior to reading passages is desirable.

On-line dictionaries assist with acquisition of vocabulary knowledge needed to understand a reading passage. Using them provides students with practice in using reference materials as well as assisting with comprehension.

Software should include a variety of comprehension tasks (e.g. finding the main idea, reading for facts, making inferences, and drawing conclusions).

Practice in different types of reading tasks is necessary in order to help students build skills in specific areas and to help students understand the spectrum of activities which encompass reading comprehension.

Text on the screen should be easy to perceive.

An uncluttered screen format and good text resolution is necessary to facilitate reading speed, reduce eye strain, and reduce negative effects from visual perceptual interference.

**Suggested Software**
**Reading Comprehension**

### Read 'N Roll (Davidson) - DOS

This program focuses on single paragraph comprehension followed by a single question involving the main idea, facts, making inferences, or sequencing. Features include vocabulary review (multiple choice in cloze procedure), paragraph review during question, text display option (text is available as black type on white background or white type on black background). A variety of grade level materials is available.

### Reading Workshop (Mindscape) - DOS

Students work in an interactive format. Comprehension activites are set in the context of short stories and popular literature. A variety of comprehension activities are available, including sequencing (students put lines of the story in correct order), and identifying key words. Students also practice punctuation and identify parts of speech.

### What's the Story? (Sunburst/Wings for Learning) - DOS/MAC

This program provides a series of passages on motivating subjects which are age appropriate for adults. This software is especially useful because of its unique format where students begin with reading the questions and seek the answers from the text. Cloze procedure is effectively used. Students are not penalized for spelling errors.

### Ace Reading Series (Mindplay) - DOS/MAC

The Ace Reporter (main idea and details), Ace Explorer (sequencing), Ace Detective (drawing conclusions), and Ace Inquirer (facts or opinions) are useful in their organization; each program focuses on one concept. Each also requires students to separate pertinent from non-essential information and has a motivating format. Reading level can be controlled, and an authoring component is available for editing existing text or writing new material.

### Skills Bank II (Skills Bank Corporation) - DOS/MAC

This program is effectively organized by concept with literal, interpretive, and critical comprehension sections, as well as figurative language. Lessons are followed by quizzes and tests.

A unique feature is explanation of both accurate and inaccurate answers. The story is available to re-read during questions, and hints are available. Students can control text and background colors from a wide array of combinations.

**Software Characteristics**

**Vocabulary Development**

Screen should be uncluttered.

An uncluttered screen allows relevant information to stand out. Students with visual processing difficulties and poor scanning skills may have difficulty separating the target vocabulary word from other on-screen information if the screen is cluttered.

Authoring component should be easy to use.

An editing or authoring option in vocabulary instruction is very practical for the study of vocabulary because it allows individualization of word lists. Students may input glossary items from their text books in order to prepare for reading or taking exams. Students who input their own word lists will have the additional benefit of manipulating their word list in a way which will enhance their understanding of the words.

Content should be effectively organized.

Objectives for the development of vocabulary should be functional and clearly stated. Whether by grade-level, part of speech, "survival" vocabulary or other system, its organization should be in agreement with the instructional needs of these students.

Sound output for each vocabulary word is desirable.

With sound output for vocabulary words, students receive an additional stimulus for learning. Additionally, having an auditory model for a word may facilitate correct pronunciation of the word. (If sound is not an option provided by a program, the use of electronic dictionaries with sound output would prove to be helpful).

**Suggested Software**
**Vocabulary**

**Word Attack Plus (Davidson) - DOS/MAC**

This program, which now includes spoken production of its vocabulary, is particularly useful in its array of formats, its organization by grade level and part of speech, and its authoring capability.

**Skills Bank II (Skills Bank Corporation) - DOS/MAC**

The Vocabulary Building and Word Knowledge modules of this program are effectively organized into specific lessons which are followed by quizzes and tests. A unique feature is explanation of both accurate and inaccurate answers. Students can select text and background colors from a wide array of color combinations, and they can print-screen lessons to review later.

**Software Characteristics**
**Games or simulations which require reading comprehension**

Software should provide a motivating environment.

It is easier for students to apply and generalize their reading comprehension strategies when they are motivated to read on. Students need to understand information from passages in order to solve problems and reach the goal of the program.

Program should provide the option to stop and save a game in progress.

Due to students' time constraints, attention spans and general fatigue factors, it is often necessary to stop a game before the goal has been attained. Students often feel more productive when they can save the activity and resume at a later **time.**

**Suggested Software**
**Games or simulations which require reading comprehension**

**Lost Tribe (Lawrence Production/Davidson) - DOS/MAC**

This software is especially useful because it provides a high interest format for making decisions, solving problems, estimating needs and testing hypotheses. Students need to use reading comprehension skills as well as knowledge of

mathematics, time, and human nature in order to be successful in this game/adventure format.

**Carmen Sandiego Series (Broderbund) -DOS/MAC**

These programs are especially useful because they require the user to read and keep track of information and use reference materials. The content focuses mainly on geography, history and culture.

Nigel's World - DOS/MAC

This program is especially useful for students with lower elementary reading level and minimal knowledge of world geography and cultures. Students build reading comprehension skills through reading assignments. They must read descriptions and hints in order to find locations and complete assignments within a time limit. Knowledge from earlier levels is necessary to complete higher **levels.**

**Headline Harry and the Great Paper Race (Davidson) - DOS/** MAC

This program is useful because it requires the user to read and keep track of information and discriminate between irrelevant and relevant information needed to win. The game addresses subjects of U.S. history, geography, and culture which may also enhance student's fund of general knowledge. This game requires some ability to hypothesize and to learn from incorrect answers.

Time Treks (Davidson) - DOS/MAC

This program requires students to use reference materials to find answers to questions. Subject matter covers a wide range of topics (science, history, civilizations, arts and more). A game board is used for selecting a variety of questions. The time factor adds pressure for reading rapidly to find answers. Students need to use this program several times before all the options available become familiar to them.

# Basic Mathematics Skills

## Assessment Measures

The following tests provide information about basic mathematics skills:

*Zi Calculation [INJ-R test 24]*

This test measures the student's ability to perform mathematical calculations from basic operations through calculus. If the test protocol is available, an analysis of the student's errors can provide insight into whether the student understands the concepts or is making only calculation errors. Prescriptive software must take into account the types of problems with which the student is experiencing difficulty.

***Quantitative Concepts [WJ-R test 33]***

**This** test measures the student's knowledge of basic mathematical concepts and vocabulary. A low score on this test may impact the student's performance in classes which have a mathematical base, e.g., chemistry, anatomy and physiology, accounting, etc.

*WRAT-R Arithmetic*

This test measures the student's ability to perform mathematical calculations under timed conditions. A low score on this test needs to be evaluated to determine whether the score is due to time constraints rather than lack of math knowledge.

## Functional Manifestations

### Basic Mathematics

A student whose test results suggest specific deficits in basic mathematical skills may also have difficulties in classes where math is not a target skill. Computing changes in measurements within hard or soft science lab assignments, understanding statistics within research articles, and handling the computing requirements within almost any mechanical, drafting or electronic courses may present unexpected difficulties for this student. In daily life this student may expect problems with making change, determining tips, managing financial accounts, estimating budgets, calculating taxes, and any measurement calculations involved in constructing, cooking or sewing.

**Software Considerations**

## Instructional Goal

Students will demonstrate knowledge of mathematical concepts, • vocabulary, and calculations. Secondarily, students will maximize processing speed of calculations without sacrificing accuracy.

## Instructional Considerations

Work on basic mathematical skills can be tedious, so a variety of approaches is helpful. Speed of solving basic processes such as addition, subtraction, multiplication and division should be pressured to a speed considered "automatic." If that is not feasible, then compensatory techniques such as rapid use of a calculator should be considered. Be aware of differences in instructional approaches between the classroom and the software.

## Software Characteristics

Software should allow control of basic mathematical processes.

Students should be able to control numeric range (e.g. single digit, double digit, etc.) in order to provide practice in appropriate areas.

Software should provide instruction to introduce concepts prior to practicing skills.

This gives students relevant information needed to complete exercises. Avoid math software without a tutorial component.

Software should provide opportunity for drill or game format with frequent feedback.

Immediate feedback is necessary in order correct any errors before a student advances in a program. Drill allows development of automatic responses with basic mathematical functions. Games provide a motivating format for this.

Students should be able to return to missed items.

This will clarify errors and allow students to demonstrate that they now understand the correct procedure.

**Software Considerations (cont.)**

A customizing component is desirable.

Students or instructors can select a specific number of problems and levels of practice in order to create individualized lessons.

Software should have an optional component for monitoring speed of processing.

"Beating-the-clock" is especially motivating in a game format. If students are able to focus and maintain attention, speed, and accuracy, their automatic responses to basic math calculations may **improve.**

**Suggested Software**

**New Math Blaster Plus (Davidson) - DOS/MAC**

This program is useful for practice in building skills in the four basic operations, fractions, decimals and percents. An arcade type game assists in building speed of "automatic" math operations. An editor allows input of student or instructor problems.

**NumberMunchers (MECC) - DOS/MAC**

This program encourages rapid solution of basic mathematics (addition/subtraction/multiplication/division) with easily controlled selection of math process and level of difficulty.

**Skills Bank II (Skills Bank Corporation) - DOS/MAC**

The mathematics section builds skills using basic math facts. More complex problems are solved with on-screen instruction from basic operations to pre-algebra. Students can print instructions for completing math problem solutions directly from the screen.

**Algebra I: Homework Tutor (Missing Link Software) - MAC**

This program generates an infinite number of algebra problems and allows students to insert their own homework problems. The program provides feedback at each step of the problem-solving process and will reveal either part or all of the process on request.

# Mathematics Reasoning

## Assessment Measures

The following test provides information about mathematics reasoning:

**:..J *Applied Problems*** *(IVI-R test 251*

This test measures the student's ability to solve word problems in mathematics. A low score on this test may indicate a lack of mathematical vocabulary or a lack of understanding of math concepts. The student will struggle with problem solving activities in some vocational programs such as nursing or drafting and in classes such as algebra or chemistry.

## Functional Manifestations

### Mathematical Reasoning

A student whose test results suggest specific deficits in mathematical reasoning may be able to handle the calculations involved in course work, but may not be able to determine the calculation process needed or to set up the calculation. The struggle in algebra and statistics classes may be obvious, but other courses such as biology, chemistry, physics, anatomy and physiology, and courses of study such as business, nursing, computer sciences, drafting and electronics may also present difficulties.

In daily life, this student may generally avoid situations requiring mathematical reasoning. The student may need assistance in budgeting, managing financial accounts, calculating taxes, determining efficient travel routes, verifying hours adjustments and taxes in their employment, and in modifying tasks involving construction, cooking, or sewing.

## Software Considerations

### Instructional Goal

Students will demonstrate the reasoning and sequencing involved in word problems and in more complex mathematical **processes.**

### Instructional Considerations

It is extremely important that students be taught necessary mathematics vocabulary (e.g. difference, sequential, yields).

## Software Considerations (cont.)

Many algebra texts now include the possibility of acquiring tutorial software correlated with the text. Software not related to a text should be evaluated in terms of its terminology, content and solution processes as related to the students' courses. There are non-computational skills underlying many mathematical processes (e.g. short-term and long term memory, sequencing). These must be addressed specifically.

### Software Characteristics

Word problems should present reasoning processes in a sequential fashion and include a variety of problems.

Students benefit from following clear models. Extended practice develops automatic responses to structuring and solving problems.

Feedback should be frequent and educational.

If response is repeatedly incorrect, the process for achieving an accurate solution should be demonstrated.

Software should provide extended practice with a wide variety of problems and/or the option of repeating problems with different numbers.

Students benefit from repetition in learning to structure and solve problems. This enables them to develop a format for approaching mathematical problems.

It is desirable that software cover a wide variety of mathematical processes.

A comprehensive program allows students to progress to higher levels without having to learn how to use a new program.

## Suggested Software

### Skills Bank II (Skills Bank Corporation) - DOS/MAC

The Math Word Problems section of this program is helpful in developing the basic reasoning processes for solving simple word problems. Students can print instructions for completing word problem solutions directly from the screen.

**Math Blaster Mystery (Davidson) - DOS/MAC**

This program is especially helpful in the areas of focusing on relevant information, planning strategies, considering alternate solutions, hypothesizing and testing hypotheses, and using inductive and deductive reasoning. A variety of motivating formats are presented, selection of any level and activity may be made at any time during the use of the program. On-screen help, calculators and **hints are easy to access.**

**Math Shop (Scholastic) - DOS**

This program sets up situations in "shops" that require students to structure and solve math processes from basic math through fractions, decimals, and proportions. Students can control options of how long to work at one process (with an infinite number of problems), which process they work on, and whether to work with time pressure.

Algebra (Broderbund) - DOS/MAC

This program uses an interactive tutorial process very effectively, allowing students to learn algebraic concepts, manipulate many of these concepts on the screen, and practice a variety of problems with different numerical data.

**Algeblaster Plus (Davidson) - DOS/MAC**

This program is especially useful for learning elementar$^{y}$ algebra skills. Students are guided step by step through several activities designed to teach and reinforce problem solving strategies. Translation of word problems into algebraic equations and an authoring component are available.

**Geometry (Broderbund) - MAC**

This program uses an interactive tutorial process which allows students to learn geometry concepts, manipulate many of these concepts on the screen, and practice a variety of problems with different numerical data.

**Suggested Software (cont.)**

**What's** My **Angle? (Davidson) - DOS/MAC**

This program is helpful in presenting geometry concepts, word problems, and proofs with real life applications.

**Calculus (Broderbund) - DOS/MAC**

This program uses an interactive tutorial process very effectively, allowing students to learn calculus concepts, manipulate many of these concepts on the screen, and practice a variety of problems with different numerical data.

# Basic Writing Skills

**Assessment Measures**

The following tests provide information about basic writing skills:

- *Dictation TINJ-R test 263*

This test measures the student's ability to demonstrate knowledge of spelling, punctuation and capitalization, and usage. Problems in this area will be reflected in the student's written work.

❑ *Proofing PWPR test 341*

This test measures the student's ability to recognize and correct errors in spelling, punctuation and capitalization, and usage. A low score on this test suggests that a student will have problems in proofreading written work to find and correct errors.

- *WRAT-R Spelling*

This test measures the student's ability to spell words from dictation. A low score on this test suggests that a student would benefit from using a word processing program with spell check capability.

**Note:**

For basic writing skills, the Functional Manifestations section and the Software Characteristics sections have been assigned to two primary aspects of writing in order to cover each area with appropriate depth. These two areas are

1. Spelling, and
2. Writing Mechanics and Proofing.

**Functional Manifestations**

**Spelling**

A student whose test results suggest specific deficits in spelling may have difficulties even in classes where writing is not a target skill. Taking notes during lectures, writing down assignments accurately, and writing answers to in-class tests and quizzes within a specified time may present unexpected problems. Students with severe deficits may even have difficulty finding correct spellings in dictionaries or understanding their own writing after some time has passed.

**Functional Manifestations**
**Spelling (cont.)**

In daily life this student may not write formal or informal correspondence (letters, memos or messages), and may have difficulty taking phone messages, filling out forms, writing checks, or locating any information which is alphabetized (e.g. names in the phone book, books at libraries, information in encyclopedias).

**Software Considerations**
**Spelling**

## Instructional Goal

Students will learn and review new spelling words, spelling patterns, and phonics skills.

## Instructional Considerations

Before students work on spelling software, it is important that they understand what spelling strategies work best for their learning styles. They also must know what spelling skills they are expected to use or develop when using spelling software.

If students will be using handwriting to take spelling tests, it is important that they use handwriting to practice spelling as well as practicing at the computer keyboard.

Correct spelling is primarily the result of applying phonics knowledge (auditory analysis, auditory memory, and sound-symbol association) as well as visual memory; and visual-motor memory. Ideally, the software should provide spelling lists for each critical element in the development of phonics skills. However, no such comprehensive program has been identified and recommended.

If students use compensatory technology, they can concentrate on critical aspects of writing (content, organization, cohesion, word choice) instead of being concerned with spelling accuracy. Compensatory technology includes on-line spelling checkers, dictionaries, thesauruses, hand-held spelling checkers, abbreviation expansion software, macros, and voice input.

**Software Characteristics**

Software should provide lists of words exemplifying a given rule and provide a logical hierarchy of rules.

Activities which focus on words exemplifying a single rule encourage generalization of the rule (e.g., adding suffixes to words ending in silent "e") and are more useful than drill designed for memorization of isolated spellings. Rule complexity level should reflect the reading/spelling level of words in word list (for example, -tion vs. -sion) would not be an appropriate rule for a second grade level list of spelling words.

Authoring component is easy to use.

The opportunity to practice personally relevant spelling lists enhances/expands the value of the software for students. Creating personalized lessons is not practical unless the authoring tool is easy to use.

Students should have multiple formats for practicing skills.

Having different formats (e.g. flash card, unscramble, crossword, word search, spelling bee, spell in context) for practice relieves tedium and facilitates generalization.

Software should include a range of levels and topics covered and/or provide data disks for different levels and topics.

This allows students with differing spelling levels to use the software. Students can progress through levels of greater spelling mastery without having to learn a new program.

Sound output is desirable.

Sound output confirms target words for students who are not sure they have read the word correctly. The psychological process of learning new spellings usually begins by hearing a word (either aloud or sub vocally).

**Software Considerations**
**Spelling (cont.)**

The software program should permit students to adjust the amount of time allowed for studying new words.

Students require different amounts of processing time in different contexts. Processing time decreases with familiarity. It is difficult for students to learn new information when under pressure.

**Suggested Software**
**Spelling**

**Spell It Plus (Davidson) - DOS/MAC**

This software is especially useful because it provides a wide variety of spelling lists, the capacity to make flash cards and includes an activity requiring proofreading and editing in context.

**Missing Links (Sunburst/Wings for Learning) - DOS**

This software is useful because it requires using reading context clues and because the user can control the level of spelling difficulty by specifying the type of missing data.

**Functional Manifestations**
**Writing Mechanics and Proofing**

A student whose test results suggest specific deficits in writing mechanics may avoid classes where writing is a target skill, but may still encounter difficulties in writing essay answers on tests, taking effective notes in lectures, writing directions to complex assignments or messages to instructors. In daily life, this student may not produce formal or informal correspondence (e.g. letters, memos or messages), or instructions as given by doctors or other professionals.

**Software Considerations**
**Writing Mechanics and Proofing**

**Instructional Goal**

Students will demonstrate knowledge of the rules of capitalization, punctuation and grammar and practice strategies for monitoring and correcting errors in written work.

## Instructional Considerations

Students must see the relationship between their written work and rules they are learning.

Students can improve the writing mechanics in their written . assignments with the help of on-line editing aids such as grammar manuals and grammar checkers working in coordination with their word processing program.

Students should be encouraged to use more than one program to improve their writing mechanics No one program provides enough practice material in enough different contexts to ensure mastery of a concept.

## Software Characteristics

Proofing programs need to provide control over aspects of writing mechanics covered in a given activity.

Students should be dealing only with material for which they have prepared themselves.

Instruction should be clearly presented with ample examples and no jargon.

Clear presentation facilitates comprehension. Examples facilitate comprehension and generalization.

Feedback should be frequent and educational.

Students should have access to a printed record of progress including number attempted, number missed, percent correct, and list of errors. (They can use this information to assess performance and set new goals). The students should also be provided with immediate feedback as well as hints and opportunities to retake missed items as this practice creates a model for self-cueing. When students successfully re-take missed items, they can feel successful as they are learning a concept.

**Software Considerations**
**Writing Mechanics and Proofing (cont.)**

Authoring component is easy to use.

Creating personally relevant material with which to practice a skill is always beneficial to the student. An instructor can individualize instruction by using an authoring component when one is provided. However, for both student and instructor, creating personalized lessons is not practical unless the editing tool is easy to use.

Providing numerous practice items is desirable.

Students need a great deal of practice with grammatical concepts before achieving fluidity with the concepts.

**Suggested Software**
**Writing Mechanics and Proofing**

**Grammar Gremlins (Davidson) - DOS/MAC**

This program is useful because it covers nine different grammar topics at grade levels 3-6.

**Skills Bank H (Skills Bank Corporation) - DOS/MAC**

This program is especially useful because of the wide scope of topics covered.

**Grammar Examiner (Compton's New Media) - DOS**

This program provides practice in proofreading in context. Using the editor to create new games and practice material is critical to ensure maximum time is spent in activities relevant to proofreading and to ensure that students are proofreading for writing concepts with which they are familiar.

# Written Expression

**Assessment** Measures

The following tests provide information about written expression:

***Writing Samples TWJ-R test 27]***

This test measures the student's ability to express ideas by producing single words, simple sentences and complex sentences. A low score on this test will be reflected in the quality of written course requirements such as tests, in-class assignments, and out-of-class papers.

***Writing Fluency*** *IWI-R test* 35]

This test measures the student's ability to write clear sentences under timed conditions. A low score on this test suggests that a student may not have sufficient time to complete assignments.

**Functional Manifestations**

A student whose test results suggest specific deficits in written expression may be able to handle simple writing tasks, but may encounter difficulty when there is limited time to write, or when more complex writing is required. Organization of ideas, integration of concepts, or expressing interpretation of symbolism may present difficulties for this student, especially in timed situations such as essay tests.

In daily life this student may not enjoy writing, and therefore avoid complex writing tasks such as formal correspondence to businesses, politicians, or the media. This student may avoid employment in a setting where complex writing skills are a requirement (e.g., correspondence, memos, briefs, reports, summaries).

**Software Considerations**

**Instructional Goal**

To enhance the student's ability to facilitate and monitor expression of ideas in sentences and paragraphs. To develop the ability to monitor written language production.

**Software Considerations (cont.)**

## Instructional Considerations

In order to practice writing skills, the student first needs to learn or know the basic components of writing (i.e. pre-writing, writing, and editing). Instruction in these areas must be clearly presented in order for the student to practice them.

Although students are often reluctant to spend time on generating and prioritizing their ideas, programs which help them brainstorm and visually organize their writing are helpful in reducing the time they spend in formulating their first drafts.

On-line editing programs (e.g. spell-checkers, grammar checkers) can be very effective in assisting students with written expression. However, as they are not considered computer-assisted instruction, their use will not be addressed here.

## Software Characteristics

Software should have components to facilitate brainstorming and organization of ideas.

Students often need instruction in organizing and planning written language. Using pre-writing software activities helps to establish a solid framework for written composition.

Software should have components to check for grammatical and spelling errors.

When using a word processor or a program designed to teach writing skills, interactive spelling and grammar checkers can be effective in helping students learn to find errors in their written work. Optional tutorial information about why the identified aspect could be in error and suggestions for possible revisions allow students to learn from their mistakes. Such features enable students to identify errors they might not otherwise have noticed; students are then actively involved in the proofreading process.

The program should provide feedback to the student about the content of their written work.

Students can become aware of common errors and problems in writing (e.g. homophones, clichés etc.) when analyzing feedback.

Software should provide a word processing component with editing features.

While students are learning to produce and edit written language, it is better for them to produce a final document without having to transfer the file into a word processing program before proceeding.

Program should provide organizational skills with feedback.

Students who cannot generate ideas or independently organize them without concrete examples may benefit from putting information into outlines which can become frameworks for essays.

Software should provide supplementary exercises.

Supplementary exercises (i.e. paper pencil activities) designed to give practice in all.aspects of producing written work gives students writing practice in a controlled environment. Generalization of skills is more likely when multi-modal practice occurs.

**Suggested Software**

**Success With Writing (Scholastic) - DOS/MAC**

This program has four modules: Prewrite, Arrange (outline), Compose (word processor), and Evaluate/Edit. These facilitate the generation, organization and evaluation of written expression (evaluation is word analysis, word count, and readability). This product also provides supplementary exercises in an activity book.

**Writer's Helper II (Conduit) - DOS/MAC**

This program has a variety of pre-writing activities for brainstorming, exploring and organizing subjects. It then can be

**Suggested Software (cont.)**

used as a word processing program for composition. This program will also provide word analysis, word count, and evaluation of readability. It also is possible to evaluate a document file produced by a standard word processor if the file has been saved in an appropriate text file format.

# Aptitude Cluster Deficits

**Assessment Measures**

**The WJ-R** provides measures of aptitudes for specific areas of academic achievement. Aptitude scores suggest a student's potential ability within a given academic area. When aptitude scores are much higher than their correlated achievement scores, it suggests the student shows the potential for significant improvement in this area. The aptitude clusters are a combination of the tests that are the most highly correlated to, and provide the best predictors of a student's performance in specific academic areas.

The aptitude clusters and the tests which comprise them are provided here for reference. The focus of remediation through the use of software should be on achievement rather than aptitude. Therefore, there will be no discussions of software remediations in this portion of the text. Further analysis of individual student test scores may suggest areas of remediation within cognitive functioning which may assist in developing a student's future aptitude for an academic skill.

# Reading Aptitude

The Reading Aptitude Cluster consists of the following tests:

- ***Memory for Sentences [test** 2]*

This test measures the student's ability to recall sentences subsequent to auditory presentation.

- ***Visual Matching [test 3]***

This test measures the student's ability to demonstrate visual discrimination by circling pairs of identical numbers in a series under timed conditions.

**Ci *Sound Blending [test 11]***

This test measures the student's ability to combine isolated sounds into meaningful **words.**

***O Oral Vocabulary [test 13]***

This test measures the student's ability to provide synonyms and antonyms for a list of presented words.

# Mathematics Aptitude

The Mathematics Aptitude Cluster consists of the following tests:

- ***Visual Matching [test 3]***

This test measures the student's ability to demonstrate visual discrimination by circling pairs of identical numbers in a series under timed conditions.

- ***Analysis-Synthesis [test 7]***

This test measures the student's ability to use learning, reasoning, and generalizing skills in solving logic **puzzles.**

- ***Oral Vocabulary [test 13]***

This test measures the student's ability to provide synonyms and antonyms for a list of **presented words.**

- ***Concept Formation [test 14]***

This test measures the student's ability to utilize nonverbal problem solving strategies and categorical reasoning.

# Written Language Aptitude

The Written Language Aptitude Cluster consists of the following tests:

- ***Visual Matching [test 3]***

This test measures the student's ability to demonstrate visual discrimination by circling pairs of identical numbers in a **series under timed conditions.**

- ***Visual-Auditory Learning (test 81***

This test measures the student's ability to make visual-auditory associations by pairing visual symbols with familiar words (visual-auditory association).

***O Sound Blending [test 11]***

This test measures the student's ability to combine isolated sounds into meaningful words.

- *Oral Vocabulary [test 131*

This test measures the student's ability to provide synonyms and antonyms for a list of presented words.

# Knowledge Aptitude

The Knowledge Aptitude Cluster consists of the following tests:

- ***Memory** for Sentences [test 21*

This test measures the student's ability to recall sentences subsequent to auditory **presentation.**

***J Visual Closure [test*** **51**

This test measures the student's ability to identify objects from pictures that are presented with missing parts, distortions, or superimposed patterns.

- ***Sound Blending [test 11]***

This test measures the student's ability to combine isolated sounds into meaningful words.

- ***Concept Formation [test 141***

This test measures the student's ability to utilize nonverbal problem solving strategies and categorical reasoning.

# Oral Language Aptitude

The Oral Language Aptitude Cluster, which measures broad-based verbal ability, consists of the following tests:

- *Picture Recognition (test 121*

This test measures the student's ability to use immediate recall to recognize a previously presented object from among a group of similar objects.

- *Concept* ***Formation (test*** *141*

This test measures the student's ability to utilize nonverbal problem solving strategies and categorical reasoning.

- *Numbers Reversed [test 171*

This test measures the student's ability to repeat in reverse order series of digits of **increasing length.**

- ***Sound Patterns (test 181***

This test measures the student's ability to identify similarities or differences in sound patterns related to pitch, rhythm, or sound content. It is particularly good at examining factors associated with ESL.

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Sohlberg, M.M. & Mateer, C. (1989) *Introduction to Cognitive Rehabilitation:* Theory and Practice. New York: Guilford Press.

Wechsler, D. (1981) *Wechsler Adult Intelligence Scale-Revised.* New York: Psychological Corporation.

Woodcock, R.W. & Johnson, M.B. (1989) *Woodcock-Johnson Psycho-Educational Battery-Revised.* Chicago: Riverside Pullishing Co.

# Software References

Ace **Series** (Mindplay) DOS

Mindplay
3130 North Dodge Boulevard
Tucson, AZ 85716
(800) 221-7911

Ace Reporter Mac Ver. $69.99 Dos Ver. $59.99
Ace Detective Mac Ver. $69.99 Dos Ver. $59.99
Ace Inquirer DOS Ver. $49.99 No Mac Ver.
Ace Explorer DOS Ver. $49.99 No Mac Ver.

**Alge-blaster Plus** (Davidson) DOS/Mac

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS Ver. $59.95
Mac Ver. $69.95

**Algebra** (Broderbund) DOS/Mac

Broderbund
Dept. 93EC
P.O. Box 6125
Novato, CA 94948-6125
(800) 521-6263

DOS/Mac Ver. $99.95

**Algebra 1: Homework Tutor** (Missing Links Software) Mac

Missing Link Software
171 W. 73rd Street
New York, NY 10023
(800) 377-3945

$120.00

**Calculus** (Broderbund) DOS/Mac

Broderbund
Dept. 93EC
P.O. Box 6125
Novato, CA 94948-6125
(800) 521-6263

$99.95

**Captains Log: Attention Skills** & **Visual Motor Skills Modules (Braintrain) DOS**

Brain Train
727 Twin Ridge Lane
Richmond, VA 23235
(804) 320-0105

$1,795.00 (complete set)
also available in three individual modules

**Carmen Sandiego Series** (Broderbund) DOS/Mac

Broderbund Software, Inc.
Dept. 93 EC P.O. Box 6125
Novato, CA 94948-6125
(800) 521-6263

Where in the World-Deluxe Edition $74.95
Where in the World is Carmen Sandiego $44.95
Where in the USA is Carmen Sandiego $44.95
Where in Europe is Carmen Sandiego $44.95

Where in America's Past is Carmen Sandiego
Mac-$59.95 /DOS-$54.95
Where in Time is Carmen Sandiego $44.95

**Cognitive Rehabilitation:** Memory (Hartley) DOS

Hartley Courseware, Inc.
133 Bridge Street
Dimondale, MI 48821
(800) 247-1380

$195.00

**Decisions, Decisions** (Tom Snyder) DOS/Mac

Tom Snyder Productions, Inc.
80 Coolidge Hill Road
Watertown, MA 02172
(800) 342-0236

DOS/Mac Ver. $149.95

Factory (Sunburst Communications/Wings for Learning) Mac

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

$79.00

**Foundations H Memory** (Psychological Software) DOS

Psychological Software
6555 Carrollton
Indianapolis, IN 46220
(317) 257-9672

$175.00

**Geometry** (Broderbund) Mac

Broderbund
Dept. 93EC
P.O. Box 6125
Novato, CA 94948-6125
(800) 521-6263

$99.95

**Grammar Examiner** (Compton's New Media) DOS

Compton's New Media
2320 Camino Vida Roble
Carlsbad, CA 92009
(619) 929-2626

$29.95

**Grammar Gremlins** (Davidson) DOS/Mac

Davidson & Associates
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

$59.95

**Headline Harry and the Great Paper Race** (Davidson) DOS/Mac

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS/Mac Ver. $79.95

**Lost Tribe** (Lawrence Production/Davidson) DOS/Mac

Distributed by:
Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS Ver. $49.95
Mac Ver. $59.95

**Math Blaster Mystery** (Davidson) DOS/Mac

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS Ver.$59.95
Mac Ver. $69.95

**Math Shop** (Scholastic) DOS

Scholastic, Inc.
2931 East McCarty Street
P.O. Box 7502
Jefferson City, MO 65102
(800) 541-5513

$69.95

**Memory Building Block** (Sunburst Communications/Wings for Learning) DOS/Mac

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

DOS Ver. $65.00
Mac Ver. $99.00

**Memory Castle** (Sunburst Communications/Wings for Learning) DOS

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

$65.00

**Missing Links** (Sunburst Communications/Wings for Learning) DOS

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

$65.00

**New Math Blaster Plus** (Davidson) DOS/Mac

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS Ver. $59.95
Mac Ver. $69.95

**Nigel's World** (Davidson) DOS/Mac

Distributed by:
Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS Ver. $49.95
Mac Ver. $59.95

**NumberMunchers** (MECC) DOS/Mac

MECC
6160 Summit Drive North
Minneapolis, MN 55430-4003
(800) 685-MECC

DOS/Mac Ver. $69.00

**Print Shop (Broderbund) DOS/Mac/WIN**

Broderbund Software Inc.
Dept. 93 EC PO Box 6125
Novato, CA 94948-6125
(800) 521-6263

DOS/Mac/WIN Ver. $69.95

**Print Shop Deluxe** (Broderbund) DOS/Mac/WIN

Broderbund Software Inc.
Dept. 93 EC PO Box 6125
Novato, CA 94948-6125
(800) 521-6263

$109.95

**Read** 'N **Roll** (Davidson) DOS

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

$59.95

**Reading Workshop** (Mindscape) DOS

Mindscape
1345 Diversey Parkway
Chicago, Il 60614
(800) 829-1900

$99.95

**The Right Turn** (Sunburst Communications/Wings for Learning) DOS

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

$65.00

**Safari Search** (Sunburst Communications/Wings for Learning) Mac

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

$79.00

**Skills Bank H** (Skills Bank Corp) DOS/Mac

Skills Bank Corporation
15 Governor's Court
Baltimore, MD 21244
(800) 451-5726

DOS & Mac Ver. $1,245.00

**Speed Reader** (Davidson) DOS/WIN

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS Ver. $59.95
WIN Ver. $49.95

**Spell It Plus** (Davidson) DOS/Mac

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

DOS/Mac Ver. $59.95

**Success with Writing** (Scholastic) DOS/Mac

Scholastic, Inc.
P.O. Box 7502
2931 E. McCarty Street
Jefferson City, MO 65102
(800) 541-5513

DOS Ver. $99.95
Mac Ver. $129.95

**The Super Factory** (Sunburst Communications/Wings for Learning) DOS

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

$65.00

**Synonyms/Antonyms/Analogies** (Hartley) DOS

Hartley
133 Bridge Street
Dimondale, MI 48821
(800) 247-1380

$49.95

**Tetris/Welltris** (Spectrum Holobyte) DOS

Spectrum Holobyte
2061 Challenger Drive
Alameda, CA 94501
(415) 522-1164

$12.95

**Time Treks** (Davidson) DOS/Mac

Distributed by:
Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

$79.95

**What's** My **Angle?** (Davidson) DOS/Mac

Davidson & Associates
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

$59.95

**What's the Story** (Sunburst Communications/Wings for Learning) DOS/Mac

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570
(800) 338-3457

DOS Ver. $235.00
Mac Ver. $239.00

**Word Attack Plus** (Davidson) DOS/Mac

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677

$59.95

**WordMunchers** (MECC) DOS/Mac

MECC
6160 Summit Drive North
Minneapolis, MN 55430-4003
(800) 685-MECC

DOS/Mac Ver. $59.00

**Writer's Helper II** (Conduit) DOS/Mac

Conduit
The University of Iowa
Oakdale Campus
Iowa City, IA 52242
(319) 353-5789

DOS/Mac Ver. $135.00

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Notes

**Notes**

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# ABIILD Utilization Guides

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# Accessibility Options (Win 95/98/NT)

## Publisher:

Microsoft Corp.
One Microsoft Way
Redmond, WA 98052-6399
(206) 635-7245
http://www.microsoft.com/enable

## Retail Cost: Included in OS

## System Requirements:

The Accessibility Options are found in the Windows 95/98/NT Control Panel which is accessed through **Settings** on the **Start** menu. The Accessibility Options are included in the default Windows 95/98/NT installation.

## Description:

The Accessibility Options include five types of adaptive system support: Keyboard, Sound, Display, Mouse, and General. Note that there is no Display Tab on the NT Control Panel.

## Recommended Uses:

The Options provide system support for: persons with physical difficulty in using the keyboard; persons who have visual disabilities and need larger print; stronger contrasts or larger mouse pointer; persons who are deaf or hard of hearing and need to see sound events; and, persons using a serial device to connect to the computer. What is singular about this cluster of operating system support is the fact that previously, almost all of these features had to be purchased from third party vendors.

## Basic Use:

1. Enter **Ctrl-Escape** to bring up the **Start** menu.
2. Double Click on **Accessibility Options.** The Accessibility Properties window appears.
3. Click on a properties tab to go to a support feature.

**The Keyboard Properties Tab**

Three features: StickyKeys, FilterKeys, ToggleKeys are available; each has a settings window which is reached by clicking on a Settings button.

- **StickyKeys**

Use sticky keys to latch the special keys (Ctrl, Alt) or the shift keys. When one of these keys is pressed, it latches and releases only when a second key is

pressed, e.g., Ctrl-P. Tapping shift or a special key twice latches it down (e.g., to type many asterisks); tapping it again will unlatch it if that option has been set. This feature is used when the keyboard user is unable to hold two keys down at the same time.

The keyboard shortcut to turn sticky keys on is to tap the **Shift** key 5 times. There are additional options which may be selected for the StickyKeys feature: turn off StickyKeys when two keys are depressed at the same time (automatically turning the feature off for a regular typist), make a sound when a special key is pressed, and a very important feature, the ability to show a visual display of whether a special key is latched or not (not available in NT). Having the visual display on the screen is useful information for persons with short term memory deficits. Right clicking on this reminder brings up an option to adjust settings.

- **FilterKeys Properties Tab**

There are two types of options which may be set from the main FilterKeys property sheet. The one most frequently used is the second radio button option. This controls the function of RepeatKeys and SlowKeys.

1. RepeatKeys
   This option will override settings on the Keyboard control panel. It is possible to turn off keyboard repeat entirely, or is it possible to slow down the rate at which the key repeat function repeats. Students with slow visual processing speeds benefit from a slowed key repeat function because it is easier to track the cursor. Students who are unable to quickly lift their hands off a key will benefit from having the repeat delay increased (a finger can stay on a key a bit longer before a key repeat begins).

2. SlowKeys
   The SlowKeys function allows the user to set a time delay before a keystroke is registered. This in effect can create a virtual keyguard for the student who strikes many keys while moving over the keyboard to the target keystroke. No keystroke will be registered until a key has been depressed for a minimum length of time.

The keyboard shortcut which turns FilterKeys on is to hold down the **Right Shift** key for eight seconds. This option will not work unless the **Use shortcut** box is selected.

- **ToggleKeys**

Choosing this function invokes a tone when one of the special locking keys is **pressed (Caps Lock, Scroll Lock, Num Lock).**

**The Sound Properties Tab**
At the current time, only one of the two options works: **SoundSentry.** Using this option generates visual warnings when a system sound occurs. From its Settings window, it is possible to have alerts for windowed programs or full screen text programs (not available in NT).

For Windowed Programs
Flash active window or flash the desktop

For Full Screen Text Programs
Flash display, characters, or border

The ShowSounds feature will display captions for speech and sounds generated by an application which has been designed to work with this feature. Currently this feature is not widely supported.

**The Display Properties Tab (not available in NT)**
From the front of this panel it is possible to invoke **High Contrast** color scheme if an application is "smart" about this feature. The **Settings** window allows the user to choose to invoke the shortcut key, **Left Alt-Left Shift-PrintScreen,** and to set specialized high contrast color schemes.

It is possible to set everything to **white on black** or **black on white,** or specialized color sets. Many color sets come with standard, large and extra-large font choices.

**The Mouse Properties Tab**

Only one set of functions is controlled by this tab: the ability to use the numeric keypad to move the mouse pointer. It is possible to modify cursor speed as well as to use Ctrl to speed up mouse movement and **Shift** to slow down mouse movement.

**The General Control Panel Tab**

- **Automatic Reset**

From this level it is possible to set a time limit on keyboard inactivity; when that limit is reached, all accessibility functions automatically turn off.

- **Notification**

It also is possible to ask for warning messages when features turn on (not available in NT), or to set a sound to occur when a feature is turned on and off.

- **SerialKey Devices**

For students needing to connect serial communication devices to a computer, this access panel allows the user to set which serial port to use and what baud rate to use.

## Notes:

### Installation

The Accessibility Options control Panel is part of the default Windows installation. If it is not installed, do so by going to the Windows Setup or Windows NT Setup tab of the Add/Remove Programs Control Panel. Check the box next to Accessibility Options and click OK. If the files are not on the local or network drive, you may have to insert the CD when asked.

# Building Perspective (Win)

**Publisher:** **Retail Cost: $79.00**

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570-0100
(800) 321-7511
www.nysunburst.com

## System Requirements:

Windows 3.1 or higher, 4MB RAM, SVGA color monitor recommended

## Description:

Building Perspective challenges students to view a group of colored buildings from ground level and then predict how those buildings would appear if viewed from above. The design emerged from manipulating Cuisenaire rods. Only by changing perspectives (i.e., viewing them from all four sides) can a person identify all of the rods and predict the overhead view. In Building Perspective, the rods have become "buildings," with height color-coded in the same way as length is coded in Cuisenaire rods.

## Recommended Uses:

Some students may find it difficult to construct an abstract representation of each building array by creating a picture in their minds. Therefore, worksheets with blank arrays are provided in the user's manual so students may construct concrete representations on paper of the arrays as they work through the program. Precomputer activities, also designed to give concrete practice in constructing the different arrays, are provided in "Classroom Use" of the manual. Some of these activities include using the Cuisenaire rods as a concrete introduction to the program.

Students focus on three skills in particular:

1. Scanning for clues and hints: They can view the nine colored buildings from any of four sides. They choose the view they need to scan for clues and hints.
2. Looking for a pattern or sequence: As they explore the views of the buildings from the sides, they detect patterns or sequences of the buildings' colors.
3. Information gathering: Finally, they use the information they have gathered to predict how the buildings will look from above.

## Basic Use:

1. Double-click on the Sunburst program group to open it.
2. Double-click on the Building Perspective icon to start the program.
3. Click on the **Help** button to read instructions about how to run the program.
4. Scan the curriculum for classroom use in the manual for ideas on how to use the program with a group.

## Notes:

# Carmen Sandiego Word Detective (Win/Mac CD-ROM)

## Publisher:

Broderbund
500 Redwood Boulevard
Novato, CA 94948-6121
(415)-382-4747 tech support
http://www.broderbund.com
http://www.carmensandiego.com

## Retail Cost: $ 38.95

## System Requirements:

For Windows 3.x and 95: 486DX, 66MHz or faster; 8MB RAM for Windows .3.x; 16 MB for Windows 95; minimum of 20 MB hard disk space; 2x CD-ROM; 640x480 SVGA display at 256 colors; High and True colors supported; sound card; video and sound card must be compatible with DirectX for Win 95.
For Macintosh and PowerPC: System 7.1 or higher, 20MHz 68040 processor or faster; PowerPC, free RAM: 6 MB for 68080 Macintosh and 7 MB for the PowerPC, a minimum of 20MB hard disk space, double-speed CD-ROM drive; 640x480 display at 256 colors.

## Description:

This program successfully incorporates numerous spelling, vocabulary, and word-reading activities into a rich, engaging multimedia environment. The richness of the multimedia enhances the learning tasks, and the "adventure" element does not overwhelm or diminish the learning activities. If continued to the end, there are more than 60 spelling, grammar and vocabulary activities to be completed in the context of 12 dangerous missions. Successful completion of a mission results in freedom for one of the 12 "good guys" held in the Babble-On machine by Carmen Sandiego and her V.I.L.E. henchmen. When in the clutches of this machine, a person loses the ability to speak normally and only can babble.

There is a practice mode, known as the **Training Simulator** (found under the **Options** button on the main screen) which features a large number of exercises that develop spelling, grammar and vocabulary proficiency, along with 18 fact-filled articles and stories that shed light on science, history, geography, and even the elusive Carmen Sandiego. This option allows a user to practice activities without being in a game mode.

## Recommended Uses:

This program should please multiple types of learners wanting a fresh environment in which to practice basic spelling, grammar, and vocabulary exercises.

## Basic Use:

1. Open the program by double clicking on the program icon in the training folder. A multimedia segment plays and provides introductory information about the adventure. A log-in screen appears.
2. Enter name and click the **Log-In** button. The main screen appears.
3. Click on the **Options** button, then the **Training Simulator** button to open a menu of activity options. Explore each one to become familiar with the activities which occur during the game. There are three levels of difficulty to choose from.
4. To begin the game, select the level at which to play (one, two or three) by clicking on the desired **Level** button, then click on the **Transport** button and then the **Launch** button to go to the depicted site.
5. When in a location, pass the mouse over the scene to pan around the environment. Hot spots are revealed by a highlight. Click on a highlight and a word activity appears. Successful completion of the activity yields information about a password. More than one activity is contained on a screen. Adequate voice prompts guide the user.
6. Successfully completing the adventure frees one of the ACME agents held in the Babble-On machine.

**The Word Machines**

- **Code Breaker:** Find or create words from the jumbled letters displayed; similar to a word seek task.
- **Fusion Chamber:** Expand vocabulary by choosing prefixes or suffixes to create new words; then match these words to the correct definition. The program uses color excellently to reinforce concepts of word prefix, root, and suffix.
- **Micropix:** Choose correct parts of speech to complete a variety of text passages. Word choices offer definitions, if desired by user.
- **Power Pack:** Use strategic thinking in this challenging alphabetizing activity. This task requires visual planning skills.
- **Spellanyzer:** A multi-sensory tool (auditory and visual, kinesthetic) to provide spelling practice.

## Notes:

Move the mouse pointer to the top of the screen and click the left mouse button to bring up the Carmen Sandiego Word Detective menu bar. General

sound control and word presentation mode for the Spellanyzer can be found here.

# Conditional Statements Plus (Win 3.x/Win 95)

## Publisher:

## Retail Cost: $134.95

Parrot Software
P.O. Box 250755
West Bloomfield, MI 48325-0755
(800) 727-7681
www.parrotsoft.com

## System Requirements:

PC Compatible (386 or faster processor) Windows 3.x or 95, 4 MB RAM, SVGA graphics 640X480X256; mouse, Windows-compatible sound card.

## Description:

The Program is designed to provide exercises requiring the use of deductive reasoning, memory, logical thinking, and thought organization. A hierarchy of conditional statements is presented either visually or auditorily. An example of the type of stimuli: "If sun is in box 12 click rain. Otherwise click clouds." A more complex example follows: "If sun is not in box 3 or rain is in box 20, click clock. Otherwise click car."

The program tracks performance and provides an infinite number of stimuli within the following five different lesson types: simple conditional, negative conditional, conditional conditional, conditional conjunctive "and," conditional conjunctive "or," negative/positive conditional conjunctive "or." Digitized speech is used

## Recommended Uses:

The program is designed for use with persons (low-to-high level functioning) with head injury, aphasia, learning and language disability, or cognitive impairment. The program may also be useful for someone with English as a second language.

## Basic Use:

1. Click the Start button.
2. Click Programs
3. Click Parrot Software
4. Click the appropriate software title.
5. Go to the File menu and select Choose Name
6. Click Setup Menu and select Setup a Lesson
7. Set values desired and click Save

8. Click to start the lesson
9. Click the Help menu to get more information

## Notes:

The program can also be purchased as part of a bundled set, the **Windows Cognitive Reasoning Package** ($699.95) which contains the following titles:

Category Naming and Completion Plus
Category Discrimination and Reasoning Plus
Inferential Naming Plus
Conditional Statements Plus
Categorization, Association and Sequencing Plus
Deductive Reasoning Plus

# Deductive Reasoning Plus (Win 3.x/Win 95)

## Publisher:

## Retail Cost: $134.95

Parrot Software
P.O. Box 250755
West Bloomfield, MI 48325-0755
(800) 727-7681
www.parrotsoft.com

## System Requirements:

PC Compatible (386 or faster processor) Windows 3.x or 95, 4 MB RAM, 640X480X16.

## Description:

This program provides activities which require the use of reasoning, and engage the user in activities requiring use of receptive and expressive language. Activities include use of vocabulary items, word retrieval, and reading comprehension. Each lesson consists of ten problems; each problems has a set of rules which describe a class of words. The task is to determine whether each word is a member of the class or not. The program uses large, clear letters. Additional lessons can be created.

## Recommended Uses:

The program is designed for use with persons with a mid-to-high level of functioning who have had a head injury, or aphasia, a learning and language disability, or a cognitive impairment. The program may also be useful for someone with English as a second language.

## Basic Use:

1. Click the Start button.
2. Click Programs
3. Click Parrot Software
4. Click the appropriate software title.
5. Go to the File menu and select Choose Name
6. Click File menu to choose Select Lesson
7. Highlight choice and click Choose
8. Click to start the lesson

## Notes:

The program can also be purchased as part of a bundled set, the **Windows Cognitive Reasoning Package** ($699.95) which contains the following titles:

Category Naming and Completion Plus
Category Discrimination and Reasoning Plus
Inferential Naming Plus
Conditional Statements Plus
Categorization, Association and Sequencing Plus
Deductive Reasoning Plus

# Dr. Brain, The Lost Mind of (Win)

**Publisher:**

Sierra On-Line
Direct Sales
PO Box 3404
Salinas, CA 93912-9850
(800) 757-7707
www.sierra.com

**Retail Cost:** $ 39.95

## System Requirements:

IBM Compatible computer, 486SX/20 MHz CPU, CD-ROM drive, 1 MB hard drive space, 3 MB RAM free, Windows 3.1 compatible sound card, SVGA video board (256 colors @ 640 X 480), audio speakers or headphones, mouse.

## Description:

Users reconstruct Dr. Brain's mind that he lost in an experiment using seven different types of intelligence to solve ten puzzle areas. A section of his mind is restored when users complete a required number of puzzles in a specific area.

## Recommended Uses:

This software, through a game format, will provide many different tasks for students with learning disabilities or head injuries. It is designed to help students develop strategies in the following areas: Verbal/Linguistic, Logical/Mathematical, Visual/Spatial, Bodily/Kinesthetic, Musical, Interpersonal Communications, and Intrapersonal Communications.

## Basic Use:

1. Double-click on the Dr. Brain icon to start the program. If you do not wish to see the introductory credits, just click the mouse button once to advance to the next level.
2. You will be presented with the screen to start a new game or to restore a game you started previously. Choosing a new game will lead you to an introductory cartoon that explains the situation and introduces the characters. To start a new game, click on the New Game page then enter your name by clicking on the letters. To continue a previous game, click on the **Restore** page, then select your name.
3. If you selected New Game, follow the introduction to learn how to play.

## Notes:

# Dragon NaturallySpeaking Preferred 4.0 (Win 95/98/NT)

**Publisher:**

Dragon Systems
320 Nevada Street
Newton, MA 02160
(800) 825-5897
http://www.dragonsys.com

**Retail Cost:** $199.00 approx.

## System Requirements:

Minimum: 200-MHz Intel® Pentium® processor with MMX™, or equivalent, IBM® compatible PC, Windows® 95, Windows 98, or Windows NT® 4.0 (with Service Pack 3 or greater). **Memory Requirements:** Minimum: 48 MB RAM for Windows 95 and 98 (64 MB is recommended), 64 MB RAM for Windows NT 4.0. **Hard Drive Requirements: 200 MB** free hard-disk space, CD-ROM drive for installation. **Audio:** Creative Labs® Sound Blaster® 16 or equivalent sound board supporting 16-bit recording.

## Description:

Dragon NaturallySpeaking is a speaker dependent, continuous speech recognition system. The active vocabulary size is 160,000 words with a 250,000-word dictionary that allows for accurate word prediction and spelling. Text can be dictated at around one hundred words per minute. The system accommodates multiple voice profiles per computer.

Features include: Select-and-Say™ editing and convenient Dictation Playback and Text-to-Speech to speed editing and proofreading and the ability to launch applications and drop-down menu commands by voice. Users can now navigate the Internet by speaking URLs and into fields in Web pages when using Internet Explorer 4.0 & 5.0.

## Recommended Uses:

This program is recommended for persons with repetitive strain injury or moderate to severe physical disabilities that impair keyboard usage. Users must be able to produce consistent speech output.

## Basic Use:

Each user must individually train Dragon NaturallySpeaking. Training is accomplished through use of the General Training program. Creating a voice profile and completing the training process takes about 45 minutes unless you have a faster than 300 MHz processor which may reduce training time to just a few minutes. NaturallySpeaking works within its own dedicated word

processing environment as well as within many popular applications. When using NaturallySpeaking, the following steps are taken:

1. Load NaturallySpeaking from the Programs menu.

2. Activate the microphone by pressing the numeric keypad + key.

3. Begin speaking clearly and distinctly in short phrases with brief pauses between each phrase.

4. If a phrase or word selected by NaturallySpeaking is incorrect say "**Correct**" and the **word or phrase** to be corrected.

5. If the correct phrase or word appears in the suggestion list, say "**Choose**" and then the number of the desired phrase or word in the selection box.

6. If the desired phrase or word does not appear in the selection box, say "**Spell That**" and begin spelling the word using the letters of the alphabet. Generally, the correct phrase or word will be identified after the first one or two letters have been spoken. When the desired phrase or word appears, say "**Choose**" and the number of the phrase or word.

## Intermediate Use:

Users can insert punctuation marks by saying the name of the mark, (i.e. "**period,**" "**comma,**" "**question mark**"**).** A variety of options exist for selecting text. Saying "**Select**" then **word, line, paragraph** or **document** selects a portion of text that can then be edited or formatted in a number of ways. (See attached Quick Reference Guide).

### Reading Text

Listening to text that has been dictated provides a useful method for identifying recognition errors. NaturallySpeaking provides two methods for listening to dictated text:

To play back digitally recorded speech of your voice dictating text, select the text to be read (i.e. say "select previous paragraph") then say "play that back." Please note that this option only works for text that has not been previously saved and then reloaded.

To play back computer-generated speech of any text in the NaturallySpeaking composition window, select the text to be read (i.e. say "select previous paragraph") then say "read that." This option works for any text file.

### Mouse Grid

NaturallySpeaking provides a **Mouse** Grid navigation system similar to that used in previous and current versions of Dragon Dictate to move the mouse pointer. Saying "**Mouse**Grid" displays a 3x3 grid with nine numbered squares which cover the entire screen. Saying the number of a square "refocuses" the grid to the selected square. Repeating the selection process moves the mouse pointer to the desired object by a process of approximation. Saying "**click**" selects the object.

Saying "**MouseGrid Window**" opens the Mouse Grid in the current window. Additional fine-tuning of the mouse pointer can be accomplished by using a limited set of mouse movement commands. Say "mouse (up, down, left or right)" followed by a number between 1 and 10, will move the mouse a few pixels in the selected direction. For example, saying "mouse up 9" will move the mouse pointer up about one-eighth of an inch.

## Advanced Use:

### Using Internet Explorer by Voice

If you install the NaturalWeb™ Internet Explorer compatibility module you can control Internet Explorer and follow links by voice. Start Dragon NaturallySpeaking before you start Internet Explorer. If Internet Explorer is already running, close it. Start Dragon NaturallySpeaking, then restart Internet Explorer. A NaturalWeb splash screen appears when Internet Explorer starts. When it disappears you can use voice commands to control Internet Explorer, including following links and dictating into editable areas on Web pages, such as boxes on forms.

### Following links or clicking buttons by voice

To follow a link or click a button by voice, just say the link or button text or part of the text. You can also say "Click" followed by all or part of the text. You can only follow links that you see on your screen. To follow a link that is low on a page, scroll down until you can see it and then say the link.

A red arrow shows the link or button that is being followed.

### If multiple links or buttons match

If more than one link or button matches what you said, an arrow with a question mark appears next to the first one.

1. To click the selected link or button, say "Click That," "That One," or "Click That One."
2. To go to the next match say "Next," "Next Control," or "Next Match."
3. To go to the previous match, say "Previous," "Previous Control" or "Previous Match."

**If a link or button does not have text**

If you want to follow a link or click a button that does not have text, first say the word or words that best describe the picture. Often, a graphic hotspot has an internal identifier (ALT or NAME) associated with it, and if you say either of these, Dragon NaturallySpeaking will follow the link. If this fails, try the following:

1. Say "Image" to go to the first picture.
2. Say "Next" or "Next Match" until you get to the link you want to follow.
3. Say "Click That" to click the picture.

Notes:

- You cannot follow links on image maps (pictures with multiple links), or on active elements such as Java applets by voice.
- If an image link has an ALT identifier, the Browser may show you the ALT text when you hold the mouse over the image for a short time. You can then say the text you see to follow the link.
- The arrow indicator does not appear in secure documents.

**Vocabulary Builder**

In order to improve recognition accuracy, NaturallySpeaking provides a Vocabulary Builder option that extracts, analyzes and stores specialized vocabulary drawn from documents you've submitted for review.

To use this option, select **Vocabulary Builder** from the **Tools** menu and follow the onscreen directions.

## Notes:

**Network:**

It is not recommended to run Dragon Naturally Speaking from a server. Even moving voice files from one computer to another requires a special sequence of steps. A networkable version has been announced and will be released some time in the year 2000.

**Installation:**

For NT installations, always login as Administrator for that computer. Insert the CD into the drive and wait for the install program to start. If your PC does not have autorun enabled, you will have to run setup either from the run command or by browsing in the Explorer. Follow the onscreen directions to install the program.

Most problems with Dragon NaturallySpeaking stem from a poor signal to noise ratio. This may be caused by any of the following: incompatible sound card, a bad microphone, microphone not matched to sound card which may need a booster pack installed, poor voice quality such as not loud enough or inconsistent speech production. High quality microphones are recommended to compensate for these problems.

## NaturallySpeaking Commands:

### Dictating text quick reference

These are the essentials of dictating text:

Start dictating:
Say whatever you want to say, speaking normally in phrases

Start a new paragraph (press Enter twice):
Say "New Paragraph"

Start a new line (press Enter once):
Say "New Line"

Enter punctuation marks, such as (!):
Say the punctuation mark, such as "exclamation point"

Dictate symbols or special characters such as @:
Say the standard name of the symbol such as "at sign"

### To dictate numbers

In most cases you can dictate numbers, including Zip codes, as you normally say them. For more detail on how to dictate numbers, see Dragon NaturallySpeaking User's Guide.

Examples:

| To enter | Say |
|---|---|
| 4 | "four" or "numeral four" |
| 23 | "twenty-three" |
| 179 | "one hundred seventy nine" |
| 5423 | "five thousand four hundred twenty three" |
| 5,423 | "five comma four twenty three" |
| 142,015 | "one hundred forty two thousand and fifteen" |
| 0.03 | "zero point oh three" |
| 2 3/4 | "two and three fourths" |
| 11/32 | "eleven over thirty two" |
| 965-5200 | "nine six five fifty two hundred" |
| 617-965-5200 | "six one seven nine six five five two hundred" |
| $45 | "forty five dollars" |
| $99.50 | "ninety-nine dollars and fifty cents" |

| | |
|---|---|
| 8:00 | "eight o'clock" |
| 8:30 p.m. | "eight thirty pm" |
| May 15, 2003 | "May fifteen comma two thousand three" |
| MCMLIX | "Roman one thousand Roman one hundred Roman one thousand Roman fifty Roman nine" |

**Punctuation and symbols**

You can enter the following punctuation marks and symbols in the text you dictate. If the same punctuation mark appears more than once, Dragon NaturallySpeaking treats the character differently depending on what you say. For example, an apostrophe immediately follows the preceding text, while an open single quote is preceded by a space.

| To enter | Say |
|---|---|
| | ampersand |
| | and sign |
| | apostrophe |
| | begin single quote |
| | open single quote |
| | close single quote |
| | end single quote |
| 's | apostrophe ess |
| | asterisk |
| | at sign |
| | backquote |
| | backslash |
| ^ | caret |
| | colon |
| | numeric colon |
| | comma |
| | numeric comma |
| | dash |
| | dollar sign |
| | dot |
| | point |
| | period |
| | ellipsis |
| | equal sign |
| | exclamation point |
| | exclamation mark |
| | forward slash |
| | slash |

| | |
|---|---|
| | hyphen |
| | numeric hyphen |
| | left brace |
| | open brace |
| | close brace |
| | right brace |
| | left bracket |
| | open bracket |
| | close bracket |
| | right bracket |
| | left paren |
| | left parenthesis |
| | open paren |
| | open parenthesis |
| | right paren |
| | right parenthesis |
| | close paren |
| | close parenthesis |
| | left angle bracket |
| | open angle bracket |
| | less than |
| | close angle bracket |
| | right angle bracket |
| | greater than |
| | minus-sign |
| | number sign |
| | pound sign |
| | begin quote |
| | begin quotes |
| | open quote |
| | open quotes |
| | close quote |
| | close quotes |
| | end quote |
| | end quotes |
| | percent sign |
| | plus sign |
| | question mark |
| | semicolon |
| | space bar |
| (tab) | tab key |
| | tilde |
| | underscore |
| | vertical bar |

frowny face
smiley face
winky face

**To add new lines and paragraphs**

While you are dictating, use the following commands:

| To | Say |
|---|---|
| Start a new line (press the Enter key once) | "New Line" |
| Start a new paragraph (press the Enter key twice) | "New Paragraph" |

Notes:

- Saying "New Paragraph" is equivalent to pressing the Enter key twice (since this is what many people do when typing a document). Saying "New Line" is equivalent to pressing the Enter key once.
- New Paragraph capitalizes the next word you dictate.
- New Line does not capitalize the next word.

**Dictation commands**

When you are dictating, you can say the following dictation commands without pausing.

| Say | To |
|---|---|
| "New Line" | Press the Enter key once |
| "New Paragraph" | Press the Enter key twice, capitalize next word |
| "Cap <word>" | Type <word> with an initial capital |
| "Caps On" | Start typing words with initial capitals |
| "Caps Off' | Stop typing words with initial capitals |
| "All Caps <word>" | Type <word> in all uppercase |
| "All Caps On" | Start typing words in all uppercase |
| "All Caps Off' | Stop typing words in all uppercase |
| "No Caps <word>" | Type <word> in all lowercase |
| "No Caps On" | Start typing words in all lowercase |
| "No Caps Off' | Stop typing words in all lowercase |
| "No Space <word>" | Do not put a space before <word> |
| "No Space On" | Stop putting spaces between words |
| "No Space Off' | Start putting spaces between words |

Notes:

- To enter the word "cap" (as in "baseball cap"), pause after saying "cap."

- The capitalization and spacing modes are automatically canceled if you move around your document.

**Move to the beginning and end of documents and lines**

You can use these commands to move to the top or bottom of a document and the beginning or end of a line.

| Say | Then say |
|---|---|
| "Go to" | "Top" |
| "Move to" | "Top of Document" |
| | "Beginning of Document" |
| | "Start of Document" |
| | "Bottom" |
| | "Bottom of Document" |
| | "End of Document" |
| | "Beginning of Line" |
| | "Start of Line" |
| | "End of Line" |

Examples:
"Go to Top"
"Move to End of Line"

Note:

- These commands deselect any text that is selected.

**Move around by lines and paragraphs**

You can use these commands to move around by lines and paragraphs.

| Say | Then say | Then say |
|---|---|---|
| "Move" | "Up" | "a Line" |
| | "Back" | "1 Line" |
| | "Down" | "2-20 Lines" |
| | "Forward" | "a Paragraph" |
| | | "1 Paragraph |
| | | "2-20 Paragraphs" |

Examples:
"Move Up a Line"
"Move Down 8 Lines"

Note:

- These commands deselect any text that is selected.

**Move around by words and characters**

You can use these commands to move around by words and characters.

| Say | Then say | Then say |
|---|---|---|
| "Move" | "Right" | "a Word" |
| | "Forward" | "1 Word" |
| | "Left" | "2-20 Words" |
| | "Back" | "a Character" |
| | | "1 Character" |
| | | "2-20 Characters" |

Examples:
"Move Right 3 Words"
"Move Left 4 Characters"

Note:

- These commands deselect any text that is selected.

**Move the cursor**

You can use these commands to move the cursor up, down, left, and right. To use these commands press the corresponding arrow keys.

| Say | Then say | Then say |
|---|---|---|
| "Move" | trup,, | 1-20 |
| | "Down" | |
| | "Left" | |
| | "Right" | |

Examples:
"Move Right 3"
"Move Up 5"

**Revising text: quick reference**

You can revise text by voice in any of the following ways:

Delete text:
Say "Scratch That"

Select text:
Say "Select <text>" where <text> is the word or phrase you want to change or "Select <text> through <text>."

Change text once you have selected it:
Say the words you want to replace the selection with.

Back up and resume dictating:
Say "Resume With <word>" where <word> is the word you want to back up to. Then, dictate the revised text.

Important:

- When you use these commands to revise text, Dragon NaturallySpeaking does not learn from its mistakes. If you want Dragon NaturallySpeaking to learn, so errors are less likely to recur, you should correct recognition errors.

**To play back dictation in a document**

1. Move the cursor to or select the words you want to play back.
2. Say "Play That Back" to play selected text, or say one of the following commands:

"Play Back Line"
"Play Back Paragraph"
"Play Back Document"
"Play Back Screen"
"Play Back Window"
"Play Back to Here"
"Play Back from Here"

You can also start playback by clicking the Play That Back button on the toolbar.

3. To stop playback, click the Stop Playback button on the toolbar, press the ESC key, or click in the document window.

Since speech input cannot be received during playback, you cannot stop playback by voice.

Notes:

- If dictation is not available, playback skips to the next section that has dictation available. Recorded speech is not available for text that was typed or pasted into a document or revised without using the Correction dialog box; for example, by selecting and saying.
- The Play Back Window, Play Back to Here, and Play Back from Here commands only play back dictation for text that is in view. For example, the Play Back from Here command plays back dictation from the cursor to the bottom of the window.
- You can simultaneously stop playback and open the Correction dialog box by pressing the minus key (-) on the numeric keypad. The last phrase played appears in the dialog box for you to correct.
- If the recorded speech for a document exceeds the space available, the earliest dictation is removed.
- You can use your right mouse button to click in a document, and then select commands to start and stop dictation playback.

**Internet Explorer commands**

"Go To Address"
Move the cursor to the Address box. You can then dictate a Web address.

"Go There" "Click Go" or "Go"
Go to a web address you just entered in the Address box.

"Go To Favorite <name>"
Load the <name> page, where <name> is the name you use for the page in your Favorites REVISE.

"Refresh" or "Reload"
Refresh the current page from the Web.

"Click <any part of a link or button name>"
Follow the link or click the button.

"Click" is optional. "Click That" "That One" or "Click That One"
Click the link or other object, such as an edit box, pointed to by the arrow.

"Next" "Next Match" or "Next Control"
When multiple links or other objects match a command, select the next matching link or object on the page.

"Previous" "Previous Match" or "Previous Control"
When multiple links or other objects match a command, select the previous matching link or object on the page.

"Stop Loading"
Interrupt the loading of a Web page.

"Go Back"
Load the previous page (if available) in the browser's history list.

"Go Forward"
Load the next page (if available) in the browser's history list.

"Go Home"
Load your Home page.

"Type Text" "Edit Box" "Click Edit Box" "Text Field" or "Click Text Field"
Go to the first location on the page where you can enter text.

"Check Box" or "Click Check Box"
Go to the first check box on the page.

"Image" or "Click Image"
Go to the first image on the page.

"Radio Button" or "Click Radio Button"
Go to the first radio button on the page.

"Page Down" or "Scroll Down"
Scroll the page down by a screen.

"Page Up" or "Scroll Up"
Scroll the page up by a screen.

"Line Down"
Scroll the page down by a few lines of text.

"Line Up"
Scroll the page up by a few lines of text.

"Go To Top"
Scroll to the top of the current page.

"Go To Bottom"
Scrolls to the bottom of the current page.

"Start Scrolling Down"
Start automatic downward scrolling of the current page.

"Start Scrolling Up"
Start automatic upward scrolling of the current page.

"Stop Scrolling"
Stops automatic scrolling.

"Speed Up"
Increase the rate of automatic scrolling.

"Slow Down"
Decrease the rate of automatic scrolling.

# Factory (Win)

## Publisher:

## Retail Cost: $79.95

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570-0100
(800) 321-7511
www.nysunburst.com

## System Requirements:

Windows 3.1 or higher, 386 machine, 4MB RAM, VGA color monitor, hard drive, sound capability optional.

## Description:

The Factory is designed to teach problem solving strategies. It focuses on several strategies including working backwards, analyzing a process, determining a sequence and applying creativity.

The first level of the program allows students to experiment with three machines. The students' creativity can be expressed in the second level of the program where they can design products, try to produce them using combinations of the three machines, and then challenge other students to produce them. In the third level, students are asked to look at a final product, and then work backwards to determine what process took place to construct the product. In order to perform the task, students must know the function of each machine and devise a sequence which will produce a final product.

## Recommended Uses:

The Factory teaches strategies such as:

1. Working Backwards - When working backwards, you solve the problem by determining what the final result should be and then working backwards to find what steps will give you that result.
2. Analyzing - Breaking down the problem, solving it in parts if possible, and identifying necessary and unnecessary information.
3. Looking for a Sequence - Finding order and discovering relationships.
4. Visual Reasoning - The ability to analyze an object that is visually presented.
5. Rotation - Understanding and applying the mathematical concept involving the number of degrees in a turn.

## Basic Use:

1. Double-click on the Factory program group to open it.
2. Double-click on the Factory icon to start the program.
3. Choose the **Help** menu to read instructions about how to run the program.
4. Scan the curriculum for classroom use in the manual for ideas on how to use the program with a group. Also, be sure to examine the Workbook Modules and Workbook Materials in *The Factory Workbook*.

## Notes:

# Hierarchical Attention Training Plus
## (Win 3.x/ Win 95)

**Publisher:** **Retail Cost:** **$134.95**

Parrot Software
P.O. Box 250755
West Bloomfield, MI 48325-0755
(800) 727-7681
www.parrotsoft.com

## System Requirements:

PC Compatible (386 or faster processor) Windows 3.x or **95, 4 MB RAM,** SVGA graphics 640X480X256.

## Description:

The program is designed to include activities which engage the user in tasks requiring the use of visual and auditory reception, attention, and the practice of curbing impulsive and perseverative behavior. Forty-eight combinations of attention activities at varying degrees of difficulty are included in the program. A target stimulus is first identified. Then a series of stimuli are displayed for short periods of time. The user is instructed to watch or listen for the target stimulus and respond only when it appears. When other stimuli appear, the user makes no response. When the task of not responding is the correct response, attention skills are facilitated and the user may learn to curb impulsive or perseverative behavior.

The attention conditions from the simplest to most difficult are focused attention, selective attention, alternating attention, and divided attention. Focused attention requires watching for one event to occur and responding only when it does. Selective attention is similar to focused attention except that an element of visual distraction is added. Alternating attention requires attending to one stimulus for a period of time and then switching attention to another stimulus. Divided attention requires attending to two different aspects of the same set of stimuli. The user must respond when a specific stimulus occurs. Periodically information is requested concerning the frequency of occurrence of the stimulus set.

It is possible to control stimulus display time and incorporation of a memory requirement. Progress reports including response time can be printed or displayed at any time.

## Recommended Uses:

The program is designed for use with persons (mid-to-high-level functioning) with head injury, aphasia, learning and language disability, cognitive impairment.

## Basic Use:

1. Click the Start button.
2. Click Programs
3. Click Parrot Software
4. Click the appropriate software title.
5. Go to the File menu and select Choose Name
6. Click Setup Menu and select Setup a Lesson
7. Set values desired and click Save
8. Click to start the lesson
9. Click the Help menu to get more information

## Notes:

The program can also be purchased as part of a bundled set, the **Windows Attention Training Package** ($399.95) which contains the following titles:

Attention, Perception, and Discrimination Plus
Hierarchical Attention Training Plus
Categories Plus
Listening Skills Plus

# Hot Dog Stand (Win CD ROM)

## Publisher:

Sunburst Communications
101 Castleton Street
Pleasantville, NY 10570-0100
(800) 321-7511
www.nysunburst.com

## Retail Cost: $59.95

## System Requirements:

Windows 95; CD ROM drive.

## Description:

Hot Dog Stand is a simulation that utilizes the computer's unique ability to randomly generate problems and events. It is designed to motivate students to become actively involved in developing a wide variety of mathematical and practical skills. The simulation requires planning and record-keeping, as well as judgments based on computational skills, to make as much money as possible while managing a hot dog stand at a series of football games.

## Recommended Uses:

In the course of the simulation, the student must buy, price, and sell varying quantities of hot dogs, sodas, and potato chips. A great many variables—including weather, type of game, the related crowd size, product quality, product price, and "money in the bank"—influence the realistic decisions that ultimately affect each student's success with the program.

The random generation of variables assures that a student—or group of students—can use the same program over and over again.

## Basic Use:

1. Open the Hot Dog Stand program from the **Programs** option on the **Start** menu.
2. Listen to the verbal instructions which familiarize the listener/viewer with the principles of using Hot Dog Stand.
3. Enter name in **Register** box.
4. Select **Beginner** option when prompted to choose playing level. This level, useful for the novice, leads the user through the game by flashing the object which must be selected to begin the next activity.
5. In ordering supplies, the user can use a calculator, or an estimator, and at the end, write a check.
6. Set prices.

7. Open the Hot Dog Stand.
8. Check the progress summary for sales.
9. Evaluate what was right about the sales and what was wrong: e.g., not enough courtesy kits, prices too high, poor quality (cheap supplies bought to save money).

## Notes:

The intermediate and advanced levels of the game incorporate random events which the user must accommodate, just as one must accommodate random events in real life.

# Inspiration 5.0 Educational Edition (Win)

**Publisher:** **Educational Cost $69.00**

Inspiration Software Inc.
7412 SW Beaverton Hillsdale Highway
Suite 102
Portland, OR 97225
(800) 877-4292; (503) 297-3004
(503) 297-4676 fax
www.inspiration.com

## System Requirements:

Macintosh
Mac Plus or higher, system 6.0.4 or higher, System 7.x or 8.x; minimum 2 MB available RAM; hard disk required.
Windows
Compatible with Windows 3.1, Windows 95 or Windows 98; 8 MB RAM, 386,486, or Pentium processor or higher running at 16 MHz or faster; VGA, SuperVGA, or other Windows 3.1 or Windows 95 compatible graphics card and monitor.

## Description:

Inspiration is a powerful visual learning tool that inspires students to organize their thinking. Students use Inspiration's Diagram view to dynamically create and modify concept maps, webs, and other graphical organizers. The integrated Outline view enables students to quickly prioritize and rearrange ideas, helping them create clear, concise writing.

Inspiration helps the user visually develop and organize ideas. Its free-form Diagram view stimulates creativity while helping to reveal new relationships, thoughts, and perspectives. Toggle to the integrated Outline view to develop ideas into a written report.

Inspiration makes creating concept maps and webs easy. Concept maps and webs are powerful visual learning tools. They are visual diagrams that represent relationships between ideas. Concept maps and webs help organize information and develop higher level thinking skills, enhancing knowledge and clarity of thought.

## Recommended Uses:

Inspiration is used across the curriculum in writing classes, literature classes, and in science, social studies, math. It also can be used for

organizing multimedia projects; in its most recent version, the outline view can be saved in HTML format.

Inspiration is especially useful for a visual learner; for some students with learning disabilities, organizing information using written outline format is very difficult. By organizing in Inspiration's graphical mode, students are able to express visual relationships which convey the information they want to express. Converting this visual display to a text-based outline (with perhaps some special notes attached to some of the graphical items) provides a verbal organizational structure which students can then flesh out in writing.

## Basic Use:

The following activity will take the user through initial steps of creating a visual outline.

Main Idea
type: The Role of Pets
click on: an arrow in the shape tool
    type: a source of income
click on: The Role of Pets
click on: an arrow in the shape tool
    type: provides company

To Do Rapid Fire

press: select the Rapid Fire tool from the tool bar and click on the text to which idea boxes will be attached. A red lightening bar will appear. (from the keypad)
    type: for children
press: enter
    type: for the sick
press: enter
    type: for the elderly
press: enter

To Create Different Shapes

click on: provides company
click on a shape from symbol palette

To Delete Links

click on: arrow from Role of Pets to Source of Income
press: delete key

To Draw Links

select: The Role of Pets
position pointer on diamond-shaped handles at the top
click and drag the link to the Source of Income symbol
(to delete link, select it and delete)

To Edit Diagram or Outline

click and drag items anywhere

Adding Text to Link
Click on the middle of a link; an edit box will appear
type: As mentioned in the news

To Change Text Font and Style

select: text in any box
go to: the FORMAT menu
select: FONT
select: font choice

For Rushwriting

select: any shape
double click: upper left corner rectangle, write notes

To View on One Page

Ctrl E, or from View menu, select Zoom and the Fit to Window;

To See in Outline Format

Ctrl T, or from View menu choose Outline

To Print on One Page

From File menu, select Print Options and select Fit to 1 Page radio button.

## Notes:

Link to http://www.inspiration.com/book/cm.html. Explore a teaching activity on concept mapping excerpted from **Classroom Ideas Using Inspiration.** This book is full of actual lesson plans created and used by teachers around the country.

# Kurzweil 3000 3.1 (Win 95/98/NT)

**Publisher:**

Kurzweil Educational Systems, Inc.
411 Waverley Oaks Road
Waltham, MA 02154
800-894-5374
http://www.kurzweiledu.com

**Retail Cost:** $ 1995.00

## System Requirements:

- Pentium PC Processor (preferably 166MHz or higher)
- 32 MB RAM - Black and white scanning
- 64 MB RAM - Color scanning
- 70MB of available hard disk space (with 80 MB reserved as swap space for virtual memory)
- 6X CD-ROM drive
- Sound Blaster or compatible sound card (16 or 32 bit)
- Microphone and speakers
- SVGA Monitor (resolution of 800x600 or higher)
- Fully TWAIN compatible scanner (Scan/Read only)
- Full size keyboard and mouse
- Windows 95/98/NT operating system

## Description:

The Kurzweil 3000 is a computer-based reading system that converts printed material into speech. Users can hear printed words spoken aloud as they read them on the computer screen. In addition to reading documents, users can use dictionary and phonetic spelling tools to enhance their reading. Scanned pages appear on the screen as they appear in the original material. As the Kurzweil 3000 reads, it highlights each word and its context. The reading voice, background/foreground colors, and text size are easily adjustable. The 3.0 version has added a number of new features as follows:

**Redesigned user interface**

1. New, brighter icons.
2. Easy access to more features, like document and page thumbnails.
3. Re-organized option tabs.
4. A customizable right button menu.
5. A Tip of the Day feature.

**New study skills and authoring tools**

6. Voice notes.
7. Bookmarks.

8. Improved note handling, including numbered note anchors.
9. Spell-checking.
10. Word prediction.
11. User definable highlighter descriptions.
12. User selectable block or word highlighting for typed documents.
13. Improved dictionary display.
14. Letter-by-letter highlighting in the spelling display.
15. Syllable highlighting in the phonetics display.
16. A Synonyms button on the main toolbar (at resolutions of 1024 x 768 or higher).

**More scanning features**

17. The newest version of ExperVision's optical character recognition (OCR) software.
18. Enhanced document feeder support.
19. Repeated scanning.
20. Scan area option.
21. Despeckle filter.

**New editing features**

22. Undo feature (undo up to 100 edits in typed documents).
23. Image selector.
24. Clipboard reader.
25. Extract text, notes, and/or highlights.
26. Zone editor.

**New test taking features**

27. Password control for dictionary, thesaurus, spell-checker, and word-prediction features.
28. Pause at Bookmarks.

**New view and navigation features**

29. Thumbnail display of scanned document.
30. Optional multiple-word display in Magnifier window.
31. Annotation display/hide feature.
32. Go To page dialogue.

**Improved software performance**

33. Program starts up faster.
34. Read by Heading algorithm is improved.

## Recommended Uses:

The Kurzweil 3000 was designed for sighted users who have difficulty reading. It could be used in any setting where students need access to print materials. It may also serve as a writing environment for users who would benefit from its special features. Because there are many on-screen controls available, it is not as suitable as a reading machine for non-sighted students as the companion product the Kurzweil 1000 which provides easy access for non-sighted users.

## Basic Use:

1. Start the Kurzweil 3000. Enter your name if prompted. A window appears with a number of menus, buttons, and combo boxes.
2. Run the mouse pointer over the buttons, pausing over each without clicking and read the tool tips that appear which describe each button's function.
3. To scan a document, place it in the scanner and click the **Scan** button.
4. After the image of the document appears on the screen, resize it to your desired size by choosing a percentage in the **Zoom** box or by clicking on the little arrows on the box.
5. Read the document by clicking on the **Play** button. Notice the Play button changes to a **Pause** button to be clicked when you wish to stop reading.
6. To get more information on a word, highlight any word in the document by double-clicking on it. Click on the **Dictionary** button in the toolbar.
7. Click the **Read** button to hear the definitions read aloud. To see a list of words with similar meanings, click **Get Synonyms.**

## Intermediate Use:

1. Click the right mouse button in the document to see a context menu of choices to make. This method may prove to be quicker.
2. To select a reading unit, choose from the **Read By** list box either by word, by phrase, by sentence, by line, or by paragraph.
3. To select a reading mode, choose from the **Read Mode** list box. Continuous mode will read until you stop it with a mouse click or clicking on the pause button. If you choose Self-Paced, reading will pause at the end of whatever reading you have selected.

## Notes:

Installation:

The installation is very simple, just insert the CD and follow the on-screen directions. The authorization floppy disk must be in the A: drive during installation when it is automatically installed. There are three authorizations on the floppy disk. If you need to uninstall, there will be a step in the process that places the authorization back on the floppy disk.

However, if you have a previous version or a version of Omni/Kurzweil 1000 the sequence of installation becomes important. As a general rule, install the older of the Kurzweil programs first, then the newer one to avoid conflicts.

If installing on Win NT, be sure to obtain the NT drivers for your scanner.

# Phoneme Sequencing for Reading and Spelling: The Lindamood Program (Mac/Win CD ROM)

**Publisher:** **Retail Cost:** $ 295 for single user

Lindamood-Bell/Gander Publishing
416 Higuera Street
San Louis Obispo, CA 93401
(800) 233-1819

## System Requirements:

A 486 machine running Windows 3.x or 95; CD ROM drive, (quad-speed is strongly recommended); Sound Blaster Pro (or 100% Sound Blaster compatible); VGA monitor capable of 640 x 480pixel display at 256 colors; 8 MB of physical RAM (16 megabytes is strongly recommended).

## Description:

The overall goal of this program is the direct development of phonemic awareness--the ability to think about and manipulate the identity, number, and order of individual sounds within words--and application of phonemic awareness for independence and self-correction in spelling and reading.

## Recommended Uses:

The modules on this CD provide problem-solving activities to reinforce the concepts presented in the Lindamood Phoneme Sequencing Program: that consonants and vowels can be felt, first just as single sounds then as sequences of sounds within words. Before students go to the computer, it is extremely important for an instructor to use the questioning process illustrated in the sample dialogues in the Lindamood Program manual and/or the Training Video Tapes to help students discover they can feel consonant and vowel sounds. This interactive questioning elicits this sensory-cognitive thinking and reasoning base. The computer problem-solving activities can further reinforce this base.

There are five processing steps to be mastered:

- consonants
- vowels
- tracking
- spelling
- reading

With this program, students are helped to integrate oral-motor feedback with visual and auditory feedback to track and verify the identity, number, and order of sounds within spoken words.

**Basic Use:**

1. Start the program from the Program menu.
2. Enter first and last name in user box so progress can be tracked.
3. Select type of sounds to be practiced.
4. Follow instructions.

**Notes:**

The activities on this disk represent a milestone in technology for phoneme awareness and practice activities.

# Listening Skills Plus (Win 3.x/Win 95)

**Publisher:** **Retail Cost:** $134.95

Parrot Software
P.O. Box 250755
West Bloomfield, MI 48325-0755
(800) 727-7681
www.parrotsoft.com

## System Requirements:

PC Compatible (386 or faster processor) Windows 3.x or 95, 4 MB RAM, SVGA graphics 640X480X256; mouse; Windows-compatible sound card.

## Description:

The program is designed to provide the user with a hierarchy of listening experiences. A random selection of 1- to 5- part verbal instructions is presented to the user. The instructions consist of assigning colors to specific geometric forms displayed on the screen. Users first select the appropriate color and then assign it to a geometric form by pointing to the form and clicking the mouse. If the response is correct, a positive verbal reinforcement is presented. After a second incorrect response, the correct answer is displayed. The program tracks performance and provides an infinite number of stimuli within each lesson. Digitized speech is used.

## Recommended Uses:

The program is designed for use with persons (low-to-high-level functioning) with head injury, aphasia, learning and language disability, cognitive impairment. The program may also be useful for someone with English as a second language.

## Basic Use:

1. Click the Start button.
2. Click Programs
3. Click Parrot Software
4. Click the appropriate software title.
5. Go to the File menu and select Choose Name
6. Click Setup Menu and select Setup a Lesson
7. Set values desired and click Save
8. Click to start the lesson

## Notes:

The program can also be purchased as part of a bundled set, the **Windows Attention Training Package** ($399.95) which contains the following titles:

Attention, Perception, and Discrimination Plus
Hierarchical Attention Training Plus
Categories Plus
Listening Skills Plus

# Microsoft Word 97 (Win 95/98/NT)

## Publisher:

## Retail Cost: $ 339.00

Microsoft Corporation (Headquarters)
One Microsoft Way
Redmond, WA 98052-6399
(800) 426-9400
www.microsoft.com

## System Requirements:

Computer with 486 processor or greater
Microsoft Windows 95/98 or later, and a 1.2 Mb or greater floppy disk drive
Hard drive with at least 8 MB space available and 35 MB for complete installation
At least 8 MB RAM
VGA Monitor or better resolution
Mouse
CD-ROM drive

## Description:

Word is a powerful document processing environment. This version includes the basic features of several applications users generally think of as separate from their word processor, e.g., charting with the graph function, graphics with a draw function, mathematical equation writing with an equation editor, and built-in spell check, grammar check, and thesaurus.

## Recommended Uses:

Word can be used to accomplish nearly every word processing task. This Windows version adds ease of use to its list of powerful features. For students with learning or cognitive disabilities, the menus and icons of the graphical user interface may be more intuitive and thus easier to use. Built-in interactive spell check, autocorrect, thesaurus, and grammar check should also help these students. For students with physical disabilities, having an equation editor and draw function built-in should also prove to be very useful. Students with mild visual disabilities will benefit from having larger print available within the program by changing the size of the type or using the zoom feature. All users will like the extensive on-line help.

## Basic Use:

1. Start up Word by choosing it from the **Start Menu.**
2. From the **Help** menu, choose **Microsoft Word Help.** The paperclip agent appears with some suggestions.

3. Type a topic of interest into the text field, then click **Search.** The help topic or topics the agent thinks you might want to look at are listed.
4. Pick a topic by clicking on it and follow the directions. Many topics include wizards that walk the user through a tutorial.

## Intermediate Use:

### Real-Time Spell Check Function

When this option is selected, Word puts a wavy red line under any word not in its dictionary. The user can right click on an underlined word to see what list of suggested correct words the program has selected. If the correctly spelled word is present, clicking on it will automatically cause it to replace the misspelled word. To turn on this function in Word do the following:

1. From the **Tools** menu select **Options.**
2. Click on the **Spelling** & **Grammar** tab.
3. Under the Spelling area, check the box next to **Check spelling as you type.**

### Grammar Checker

The use of a grammar checker may be helpful for students with some prior knowledge of grammar rules and writing style conventions. However, for students not able to benefit from grammar checker use, creating a custom grammar check profile for them is a consideration. It is possible to turn off or on every feature within the grammar check program. Perhaps only one grammatical rule could be checked, that of subject-verb agreement. Students could work in instructor-created text especially constructed to effectively trigger the grammar checker. This focused activity could have a two-fold benefit: students could experience a grammar checker working efficiently, and they might also learn more about subject verb agreement—either from the activity itself or from actively reading all the **Explain** screens if their reading levels allow it.

### How to Customize the Grammar Checker

1. From the **Tools** menu select **Options.**
2. Click on the **Spelling** & **Grammar Tab.**
3. Make sure the **Check Spelling as You Type** function is not checked; keep the use of the Spell Check as a dedicated activity. From the Grammar section, select the box next to **Check Grammar as You Type.**
4. Click the **Settings** button to see the grammar checker options.
5. Deselect all grammar and style options except **Subject-Verb Agreement.**
6. Click OK.

The grammar checker now has been modified. The next task is to write text with subject-verb errors which effectively trigger the grammar check rules.

**An Auto-Correct Function**
When this function is on, Word will automatically correct "adn" to "and" as the user types. Word comes with many common typing errors entered into the autocorrect dictionary. It also is very easy to add one's own personal common typing errors.

Directions for turning on this function and for adding personal choice typing errors:

1. From the **Tools** menu, select **Autocorrect.**
2. Make sure that **Replace Text as You Type** is selected.
3. Enter a frequent typing error into the **Replace** field, and in the With field enter a correctly spelled version of the word.

**Outline Function**
It is useful for some students to work in the outline mode for pre-writing activities, brainstorming and making a list of related ideas. The outline function allows topics to be dragged, or moved up or in through the tool bar, and students can develop a coherent document structure.

To begin Outline mode, go to the View **Menu** and choose **Outline** view. Note the new tool bar. To return to Normal view, go to the View menu and select **Normal.**

**Use Word Document Templates or Wizards**
Microsoft Word comes with many useful document templates. They can be accessed through the **New** dialog box. Also accessible from this dialog box are numerous "Wizards" which lead the user through customization processes for different document types.

## Notes:

# Quictionary Reading Pen

## Publisher:

## Retail Cost: $ 283.00

Seiko Instruments, USA
Educational Products Division
2990 West Lomita Blvd.
Torrance CA 90505
877-344-4040 (toll free)
http://www.readingpen.com/

## System Requirements:

Three AAA batteries.

## Description:

This small, free standing hand held scanner will scan a wide variety of English type and have the word which was scanned read aloud through a built-in speaker or through headphones. Additionally, a small LCD screen will display the word and its definitions.

## Recommended Uses:

This small scanning device is designed to help users get an instant definition of words while reading hard copy text.

## Basic Use:

The device is very easy to use:
After taking off the tip cap and pressing the **red On/Off** key, do the following:

1. Hold the pen vertically and with the red scan light flashing, place the pen tip on the paper to the right of the word to be scanned.
2. Position the **black line** on the tip so its position is approximately at mid height of the text characters.
3. Slowly and evenly push the pen left across the word, making sure to get the **spaces** on either side of the word. The spaces provide boundary markers for text recognition purposes.
4. Lift the pen up; onscreen will appear a graphical representation of the word scanned; this image converts automatically to a text image and the word is read aloud. The read aloud option is probably best used with the small button headphone set which is provided. To hear the word again, press the **Enter** key.
5. Access definitions of the word by tapping the **Down Arrow** key on the device keypad.
6. Press the **Escape** key to return to the **Return-to-Scan** state.

7. When through using the pen, replace the tip cap and press the **red** key.

There are other options which can be set by the frequent user (volume, display intensity, full or reduced definition display, etc.). These additional options are easily set through the intuitive menuing program built into the device.

## Notes:

# Safari Search (Win)

## Publisher:

Sunburst Communications/Wings for Learning
101 Castleton Street
Pleasantville, NY 10570-0100
(800) 321-7511
www.nysunburst.com

## Retail Cost: $99.00

(5 user lab pack)

## System Requirements:

Windows 3.1 or Windows 95.

## Description:

The purpose of Safari Search is to learn to gather information and make inferences from that information, a basic precursor of mathematical thinking. Safari Search requires users to make inferences; invent and extend problem-solving tactics; and to collect, organize and use information.

All Safari Search activities are search games on a 5 by 5 Safari layout. In each of the twelve games, one or more animals hide and the object is to search them out. This requires complex tactics and thoughtful decision-making.

## Recommended Uses:

Use Safari Search as part of a problem solving series, combining visual and verbal information. It helps to develop use of inference, prediction and hypothesis testing.

## Basic Use:

1. Start Safari Search from the Programs option on the Start menu.
2. Choose a game from the menu by clicking on the button of your choice. The games progress from easiest to most difficult.
3. Follow the on-screen instructions to locate the hidden animals.

## Notes:

Although students frequently comment that there are not enough instructions for some activities, a strong characteristic of the game is its ability to force the user to new strategies and associations.

# SkillsBank 4 (Win )

## Publisher:

Skills Bank Corporation
Park View Center 1
7104 Ambassador Road
Baltimore, MD 21244
(800) 451-5726
www.skillsbank.com

## Retail Cost: $1,245.00

## System Requirements:

Skills Bank 4 will work in Windows 3.1, Windows 95, NT; purchasable as a single-user CD, 5-user lab pack, or as a network version (50-user or unlimited in one building).

## Description:

Skills Bank 4 is an all-new version of the basic SkillsBank 3 program. The activities are the same, but the format is different. The program now comes on CD ROM only. Critical thinking strands are incorporated throughout each subject area. The 200 plus topics are contained in 19 subject areas. The program comes contains these basic content areas: reading, language, writing, basic mathematics, intermediate mathematics, and information skills.

## Recommended Uses:

Skills Bank software is useful for any student needing a brief, basic tutorial review in major basic skills areas. This new version comes with a complement of in-depth activities which can be purchased. There are two Practice series and a MathCheck starter kit currently available.

**Major Components:**
Diagnostic and prescriptive pre-tests
Basic skills lessons
Quizzes
Thinking skill lessons

**New Features**

- Voice and sound guide students through lessons and provide an extra modality for learning.
- Lessons on Internet fundamentals are included.
- Mathematics activities have been revised and there are 40 new activities.

- Purchasable Language Practice Series provides 22 add-on lessons with open-ended interactive practice on all concepts in SkillsBank Language Series.
- Purchasable Computation Practice Series features 24 add-on lessons with randomly generated problems in an open-ended interactive setting.
- Enhanced teacher reports.
- Purchasable mathematics worksheet generator (MathCheck) which offers add-on libraries of additional math content.

## Notes:

Pricing:

| | |
|---|---|
| Single User Set (Basic Skills) | $1245.00 |
| 5-User Lab Pack | $2490.00 |
| 50-User Net Site | $4980.00 |
| Unlimited Net Site | $7470.00 |

# Spell It 3 (Win)

## Publisher:

## Retail Cost: $ 49.00

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677
www.davd.com

## System Requirements:

A 386/25 MHz or faster DOS-based machine running Windows 3.1; a hard disk with at least 5 MB free space; Windows-supported sound card recommended; 4 MB of RAM.

## Description:

This program is designed to incorporate fun into the mastery of new spelling words. It is designed to help students of all ages develop and improve spelling skills. As students move through the program, they read spelling words in context sentences, see words broken into syllables, distinguish between correct and incorrect spellings, and complete, unscramble, and edit these words.

## Recommended Uses:

This program is useful for a broad range of students, because in addition to the 3600 word from first grade level to adult, there is an authoring component which allows an instructor or student customize spelling lists.

## Basic Use:

1. Start Windows; double click on the Spell It 3 icon.
2. Register as New Student, Continuing Student or Visitor.
3. Select desired vocabulary level and a category.
4. Explore the major activities:
   - Bayou Word Preview
     - See Word
     - Finish Word
     - Flash Word
   - Leap to Complete
     - (fill-in missing letters game)
   - Frog Crossing
     - (crossword puzzle game)
   - Midnight Correction
     - (editing, proofing activity)

- Bullfrog Log Game
  (an arcade game based on correct word recognition)

**Notes:**

# Typing Tutor 7 (Mac /Win CD-ROM)

## Publisher: Retail Cost: $ 49.95

Davidson & Associates, Inc./Simon & Schuster, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677
www.davd.com

## System Requirements:

The same disc may be used in a Macintosh or Windows computer.

For PC:
At least a 486 MHz processor with 8 MB RAM; Sound Blaster-compatible multimedia sound card; hard disk with 1 MB free space; at least a 2x CD-ROM drive; Windows 3.1x or Windows 95.

For Mac:
A Power PC or at least an 040 processor with 8 MB RAM; monitor with 640x480 display area; 256-color capacity; at least a 2x CD-ROM drive.

## Description:

This multimedia typing tutor evaluates strengths and weaknesses of the typist and then creates customized lessons based on the typist's individual needs. A novel addition is the inclusion of practice sample writings taken from over 100 well-known books. Learning is made fun with video clips which run as a reward after the completion of certain typing tasks. Excellent statistics are kept by the program.

## Recommended Uses:

This Davidson product is recommended for any individual desiring to learn or improve typing skills. The program incorporates some newer features: e.g., typing drill embedded in the construction of particular letter types, and provides real-time practice on useful activities.

## Basic Use:

For Mac or PC:
1. Double click on the Typing Tutor 7 icon.
2. Register and take an assessment test, or enter the program as a visitor.
3. Follow the lessons suggested by the program, or randomly explore the program as a visitor.

Major Program Components

- **Keys to Success**

Once a practice typing test has been taken, a personalized lesson containing words and sentences is created. Lessons, games and tests are available in QWERTY, two-handed Dvorak, and 10 key setups.

- **Chart Your Progress**

Asses progress with eye-catching, printable graphs after completing time-monitored speed tests.

- **Practice Makes Perfect**

Sharpen typing skills with practice samples from over 100 well-known books, including everything from fiction and biography to sports and humor.

- **It's Showtime**

Practice typing with 100 text excerpts then rewards the typist with a video clip related to the subject chosen for typing drills.

- **Arcade-Style Games**

Rescue cities from alien letters and words; solve hidden word mysteries; race against the clock.

## Notes:

# Ultimate Phonics ver. 1.0 (Win)

**Publisher:** **Retail Cost: $ 69.95**

Spencer Learning
8895 Towne Centre Drive Suite 105
San Diego, CA 92122 USA
Voice: (619) 455-9818
Fax: (619) 715-1452
Email: mail@spencerlearning.com
www.spencerlearning.com/

## System Requirements:

Windows 3.1 or Windows 95; 80486 or higher; 16 MB RAM; hard disk with 10 MB free space; VGA or other Windows display; sound card; CD-ROM drive; Microsoft mouse or compatible.

## Description:

This excellent, easy-to-use software program is designed to provide an interactive, multimedia reading program that thoroughly teaches reading with phonics. Using very accurate digitized speech (digital recording of a human voice) the user is led through an understanding of short vowels, long vowels, consonants and diphthongs. The verbosity level of the program can be adjusted so that everything is spoken (including menu options) or few speech options can be selected.

There are no graphics, so there is no age contamination. The program is an excellent review of phonics as well as an introduction.

The program comes with a thick manual containing print versions of all program screens. This manual is seen as the bridge between working on the computer and the act of reading hard copy text.

The program will track a student's progress if the student signs in and exits each time. When the student returns, s/he is taken to the appropriate lesson after signing in to the program. No print records are available

## Recommended Uses:

This flexible program is designed for use from age 4 to adult, according to the documentation. The program is extremely user friendly because it always is possible to go anywhere from anywhere, a trait not often found in inexpensive software. There is great consistency in activity format, making it easy for students to use. Although the HTCTU stays away from

commentary in these training guides, this program is seen as excellent in methodology, in its use of digitized sound, as well as being extraordinarily cost effective.

## Basic Use:

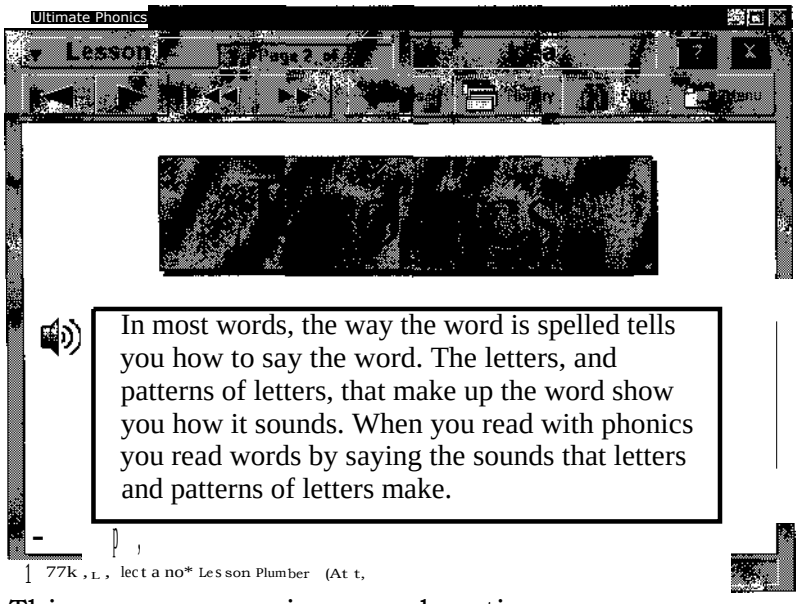
The following description of the program is taken from the program website: www.spencerlearning.comiult phonics/reviews/

"The Ultimate Phonics reading program consists of 262 lessons, covering the major phonics sounds and rules. The lessons introduce and "sound out" over 4400 of the most common words in the English language. In addition, the lessons contain over 2000 sentences made up entirely of words from this core vocabulary. Each lessons builds upon the material introduced in preceding lessons.

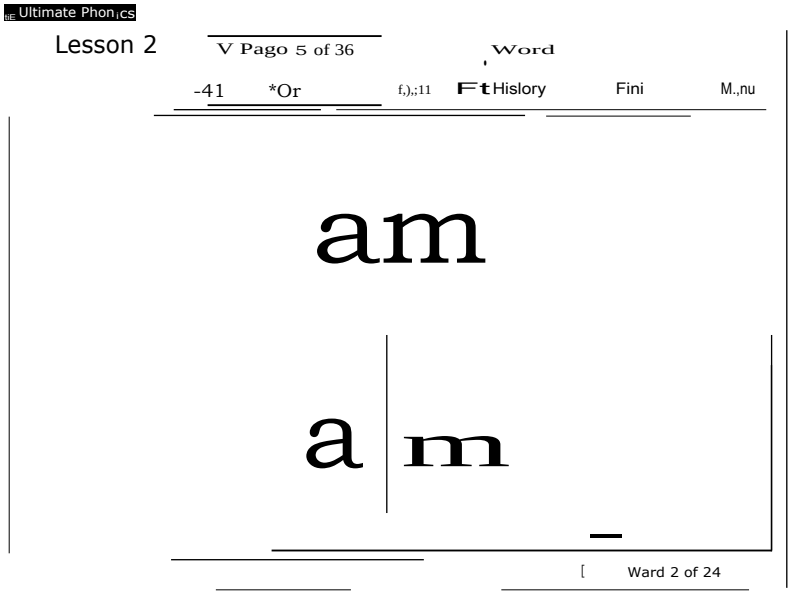
There are six types of lesson pages: Idea, Pattern, Sight Word, Word List, Word and Sentence.

1. An Idea page tells about a phonics idea or concept. For example, the idea of a *syllable* would be explained.
2. A Pattern page tells about a letter pattern that represents a sound such as **th, ee,** and **tion.**
3. The Sight Word page introduces a common word that does not follow the standard phonics rules. There are around 100 words in this program, such as "the", "says" and "where."
4. The Word List page displays a list of all the words that are contained in a lesson. The Word pages, which are the heart of the Ultimate Phonics Program, introduce new words and have features that enable you to understand exactly why a word sounds the way it does. To hear the sounds in words, move the mouse slowly. Every word can be spoken normally, spoken in syllables or fully sounded out (sound by sound), all by just pointing with the mouse!
5. The Sentence page displays a sentence, and provides important reading practice. A typical lesson may contain as many as ten Sentence pages. It is possible to print out the word lists and sentences."

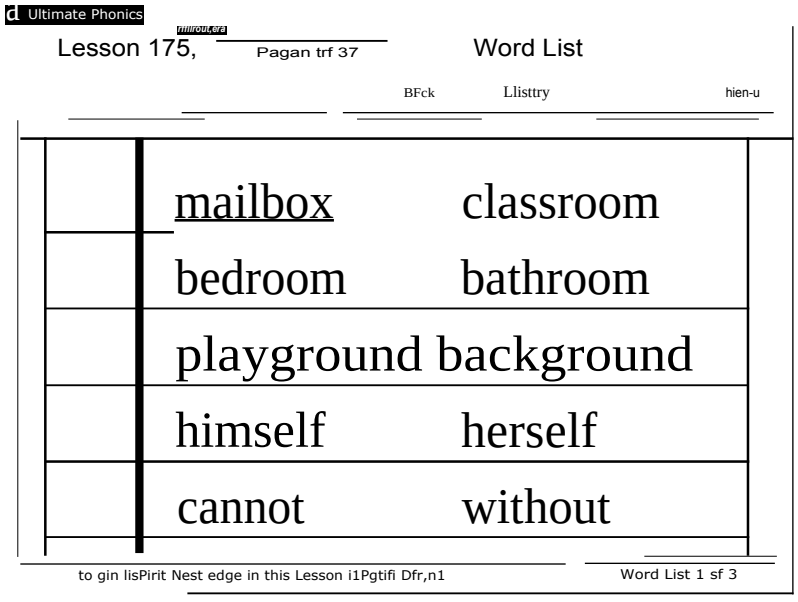
It is expected that the user begins at lesson one and proceeds through, but it also is possible to use the program's Find box which allows the user to select drill on (1) specific sounds, (2) specific ideas or concepts, or (3) specific sound patterns.


Ultimate Phonics
Lesson
In most words, the way the word is spelled tells you how to say the word. The letters, and patterns of letters, that make up the word show you how it sounds. When you read with phonics you read words by saying the sounds that letters and patterns of letters make.

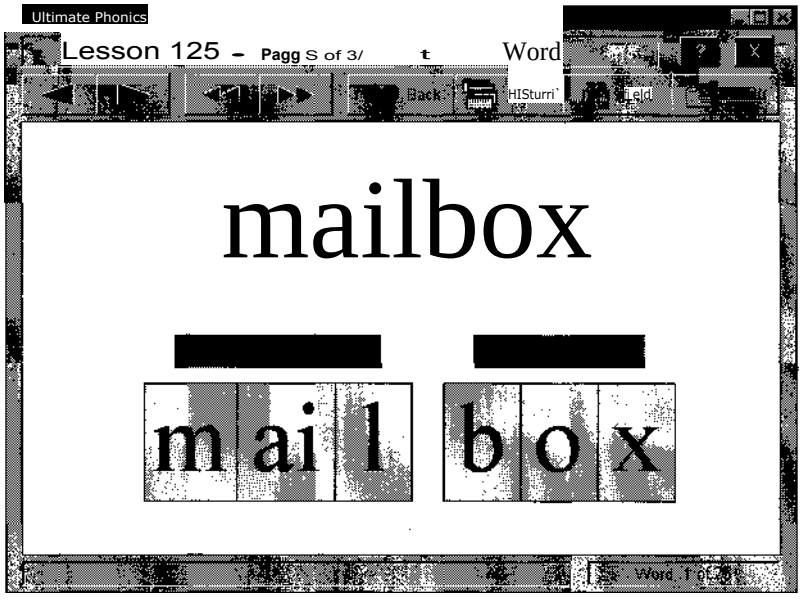
This upper screen is an explanation page.
Clicking on the speaker turns text in the box to blue and it is read. Passing the cursor over the word "phonics" causes it to be read.




Passing the mouse pointer over the word "am" causes it to be read; passing the pointer over block says the sound of the letter in the block. Concepts of phonemic integration can be internalized as the user passes the mouse over the word, then the individual sounds, and then returns to pass the mouse over the word. The result is a seamless presentation of word, sounds, word, a sequence which is an excellent learning paradigm.




Sample Screens (for compound words)




Left click a word on the upper screen and it is read. Right click on a word in the upper screen and the program takes the user to the second screen. In the lower screen, passing the mouse over the whole word "mailbox" causes it to be read. Passing the mouse over a red bar causes the word under the bar to be read. Passing the mouse over the letters of a yellow square will generate the sound of the letter or letters. As in the example on the previous page, a seamless drill of word, sounds, word can be practiced.

**Notes:**

# Ultimate Speed Reader (Win)

## Publisher:

Davidson & Associates, Inc.
P.O. Box 2961
Torrance, CA 90509
(800) 545-7677
www.davd.com

## Retail Cost: $39.95

## System Requirements:

80286 processor or higher with at least 1Mb of memory, hard drive, VGA, EGA, or Hercules card, Windows 3.0 or higher, mouse recommended.

## Description:

Ultimate Speed Reader for Windows is designed to help improve reading speed, comprehension and retention rate. It will assess students' current reading speed and comprehension level and prescribe an individualized training program for them.

Ultimate Speed Reader contains nine different topics of reading passages and allows users to import text using either a text file or the Windows clipboard. The learning activities include: warm-up exercises with letters and words, eye movement lessons, column or newspaper reading, paced reading, timed reading, and Eye Max, a game for improving peripheral vision. Ultimate Speed Reader has a record keeping feature that will provide reports and graphs of progress. It also provides timing and pacing for off-screen reading practice.

## Recommended Uses:

Ultimate Speed Reader can be used as a self-study course to improve reading speed and comprehension. The manual provides detailed practice sessions to guide the student through the self-study course.

## Basic Use:

1. Begin Ultimate Speed Reader by double clicking on the **Speed Reader** icon. The Student Registration box will appear. You may register as a New Student, a Continuing Student, or as a Visitor.
2. Register as a New Student and take an assessment test to establish your base reading speed and comprehension level, and to set your target reading speed. Ultimate Speed Reader will create a Training Program to suit your needs and will save your reading speed and comprehension scores.

3. To display your Training Program, click the **Training Program** button. To return to the Main screen, click the **Main Screen** button.
4. Choose one of the activities from the Main Screen by clicking on one of the large buttons labeled **Reading Warm-ups, Eye Movement, Newspaper Reading, Paced Reading, Timed Reading, or Eye Max.**

## Notes:

# Visual and Auditory Memory Span Plus
## (Win 3.x/Win95)

**Publisher:** **Retail Cost:** $134.95

Parrot Software
P.O. Box 250755
West Bloomfield, MI 48325-0755
(800) 727-7681
www.parrotsoft.com

## System Requirements:

PC Compatible (386 or faster processor) Windows 3.x or 95, 4 MB RAM, graphics 640X480X16; Windows-compatible sound card.

## Description:

This software provides auditory and visual memory practice for alpha-numeric symbols. The program is designed to test and exercise short-term memory skills. A list of between 1 and 9 items is presented and the user must recall the entire list in the correct order.

The stimuli can be either letters of numbers and can be presented either visually or auditorily. There is automatic recording of performance and it is possible to control the time visually presented stimuli is displayed.

## Recommended Uses:

The program is designed for use with mid- to high-functioning persons with head injury, aphasia, language and learning disability, cognitive impairment.

## Basic Use:

1. Click the Start button
2. Click Programs
3. Click Parrot Software
4. Click the appropriate software title
5. Go to the File menu and select Choose Name
6. Click Setup Menu and select Setup a Lesson
7. Set values desired and click Save
8. Click Begin Lesson
8. Click the Help menu to get more information

## Notes:

The program can also be purchased as part of a bundled set, the **Windows Memory Package** ($799.95) which contains the following titles:

Visual and Auditory Memory Span Plus
Visual Memory Plus
Visual Pattern Memory Plus
Compensatory Memory Strategies: Chunking Plus
Compensatory Memory Strategies: Loci Plus
Remembering Names Plus
Auditory and Visual Instructions Plus
Memory for Directions Plus

# Visual Pattern Memory Plus (Win 3.x/ Win 95)

## Publisher:

## Retail Cost: $134.95

Parrot Software
P.O. Box 250755
West Bloomfield, MI 48325-0755
(800) 727-7681
www.parrotsoft.com

## System Requirements:

PC Compatible (386 or faster processor) Windows 3.x or 95, 4 MB RAM, graphics 640X480X16.

## Description:

This software program provides practice in visual matching, short-term visual memory, part-whole memory, attention and visual discrimination. The format of the program is to present a picture grid of 16 pictures and then to temporarily remove some of the pictures revealing a pattern comprised of between 1 and 9 pictures. The user is asked to remember the pattern displayed. The original 16 pictures are then displayed again to hide the pattern. The user is asked to identify the pictures that formed the pattern.

The program provides a variety of options by allowing the clinician to determine how many pictures to display and how long to display them. Additionally, the program records performance, prints performance reports, including user response times. On-screen help is included.

## Recommended Uses:

The program is designed for use with mid- to high-functioning persons with neurologic impairments of short term memory and attention.

## Basic Use:

1. Click the Start button
2. Click Programs
3. Click Parrot Software
4. Click the appropriate software title
5. Go to the File menu and select Choose Name
6. Click Setup Menu and select Setup a Lesson
7. Set values desired and click Save
8. Click Begin Lesson
9. Click the Help menu to get more information

## Notes:

The program can also be purchased as part of a bundled set, the **Windows Memory Package** ($799.95) which contains the following titles:

Visual and Auditory Memory Span Plus
Visual Memory Plus
Visual Pattern Memory Plus
Compensatory Memory Strategies: Chunking Plus
Compensatory Memory Strategies: Loci Plus
Remembering Names Plus
Auditory and Visual Instructions Plus
Memory for Directions Plus

# What's My Logic (Win)

## Publisher:

## Retail Cost: $ 65.00

Critical Thinking Press & Software
P.O. Box 448
Pacific Grove, CA 93950
(800) 458-4849
(408) 393-3277 (FAX)

## System Requirements:

Windows version requires MS Windows 3.0+, 14 inch VGA monitor, **1 MB** RAM; Macintosh version available.

## Description:

This software presents mind-stretching figural and verbal games that enhance reasoning. The activities are intended to teach fundamental rules of logic to students of all abilities. For each game, the computer allows only moves that follow a specific rule of logic. Students must use deductive and inductive reasoning to determine the correct path from start to goal with as few wrong moves as possible. Then the student is to identify the logical rule which he or she used.

## Recommended Uses:

The program is recommended for any student needing support in logical thinking skills or visual perceptual activities. The four basic logic rules (Conjunction; Negation; Inclusive Or; and, Exclusive Or) are always listed at the bottom of the screen so that the user is reminded of the possible patterns to look for: e.g., it is only possible to move to objects that do not have the same size.

## Basic Use:

1. Double click on the **What's** My Logic icon.
2. Select the **Instructions** button from the main menu.
3. Read the instructions.
4. Go to the **Game** menu on the menu bar and select **Main** menu.
5. Select **Play Game.**
6. Select game parameters.
7. Start the game.
8. Move the blinking highlight through the cells. The computer controls which ways the highlight can move.
9. Deduce what rule the computer is using so that a path can be successfully made to the **Goal.**

10. Once the Goal has been reached, the user is questioned if he or she is ready to identify the rule the computer is using. Click the **Yes** button, and then click on the rule at the bottom which states the logic rule used by the computer.

Once a game has been completed, it is useful to select to repeat the same game but alter the mode of presentation. There are three modes of presentation: figural, verbal, and mixed. The subjective experience of working with the different display modes is a good learning activity.

## Notes:

## WYNN 2.0 (Win 95/98/NT)

**Publisher:**

Arkenstone, Inc.
NASA Ames Moffett Complex
Building 23, P.O. Box 215
Moffett Field, CA 94035-0215
800-444-4443 (in the U.S. and Canada)
650-603-8880 (from other locations)
fax: 650-603-8887
www.wynn.arkenstone.org

**Retail Cost:** WYNN with OCR $995
WYNN Reader $399

### System Requirements:

- An IBM-compatible Pentium PC.
- Windows 95,98, or NT (ver 4.0 or later.)
- 16 MB RAM; 32 recommended.
- CD ROM drive.
- Video card and monitor capable of VGA video in 640 x 480, 256 color mode, or greater.
- 45 MB available hard disk space. (This figure is space necessary to load the program. It does not include the space required to save files.)
- Standard keyboard.
- Supported Hewlett Packard flatbed scanner or a supported TWAIN-compatible scanner.

### Description:

WYNN, (What You Need Now) a scan/read program, has been developed as a reading productivity tool to benefit all readers. It is designed to help the reader read more easily, comprehend more efficiently, and study more effectively. The easy-to-use, color-coded tool bar interface has been especially designed to be useful for persons with learning disabilities. It is possible to purchase the program without the scanning capabilities.

### Recommended Uses:

Although designed for general use, the program is of extreme value to persons with learning disabilities who have difficulty reading and/or comprehending. More than just a scan/read program, it provides specialized tools to assist in reading tasks as well as tools to facilitate comprehension. In order to determine what features might be useful for persons with learning disabilities, Arkenstone worked with researchers from Syracuse University and educators in the DSP&S program at UC Berkeley.

A singular feature of the program is the quick guide for users in a color-coded format. The color-coding is keyed to the colors of the toolbars. A manual in such a reference material style is easily accessible for students with learning disabilities.

## Basic Use:

(Read only version)

1. From the Start menu, select Programs, Arkenstone, WYNN.
2. From the WYNN File menu, select Open and then select a file name.
3. When the file has loaded in, click on the Read button on the tool bar to hear the text being read.

### WYNN Features

Files may be viewed in two ways: in exact view which presents the page exactly as it appears on hard copy, or a text view. In the Exact view it is possible to read the page, change text and background colors, and Zoom in and out. The dictionary and spelling functions are also available in the Exact view.

It is possible to make many more changes to a file saved in text format. It is possible to read the material in different ways: by word, by line, by sentence or by paragraph; as well to affect its visual display: change colors of text, size of text, background color, space between letters, space between line, margin size.

Tool Bar

Underneath the File menu on the WYNN screen is a tool bar. This tool bar is a rotating tool bar; clicking on the left button of the bar rotates it. Each tool bar is relates to different type of function has a unique color. The color-coding of the toolbar is designed to be especially helpful for students with learning disabilities.

Blue Writing and File Management

It is now possible to edit text in Wynn. Clicking the Write button on this tool bar allows the user to enter text in a new file or edit text saved from a scanned image. The addition of the Write button is an important enhancement. Also on this toolbar are buttons to scan, open, close, save and print files. There also is a button that lets the user choose how WYNN displays a scanned page. Some features in this tool bar are only available when displaying a document in Text View.

Green Visual Presentation

On this tool bar are buttons the determine how WYNN presents the document page: the size of the text, spacing and margins, and the type of font used. There also is a button that lets the user choose specific combinations of text and background colors. Features on this tool bar are only available when displaying a document in Text View.

Pink Study Tools

On this tool bar are buttons for a dictionary and thesaurus, buttons which allow the user to add a bookmark, text, or voice note to the document, or highlight a section of text. There are also buttons to help find a specific word in a document, spell a word aloud, or break it into syllables.

Yellow Reading Options

On this tool bar are buttons that help the user adjust the size and style of the Spotlight (focus), select how fast WYNN reads and at what volume, and determine what screen elements WYNN speaks aloud. There also is a button that lets the user "mask out" everything on the document page except the section which is being read. Some, features on this tool bar are only available when displaying a document in Text View.

## Notes:

Site licenses and user packs are also available.